AMERICAN GAS ASSOCIATION MONTHLY

Vol. II No. 7

July, 1920

"Anything which interferes with the attraction of capital to a public utility handicaps the development of the territory served. That to increase rates enough to attract capital will increase the cost of living is in a measure true, but the refusal to grant sufficient rates is 'penny wise, pound foolish' and inadequate service will result, which through indirect costs will increase the cost of living many times the increase necessary to attract capital.

Discriminating against utilities by limiting their net earnings to half or less than half of the purchasing power of the pre-war net return will prevent them from obtaining capital in competition with other industries whose earnings are not so limited."

—Commissioner Gaul of the Public Utility Commission of New Jersey.—

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AUTHORS

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AMERICAN GAS ASSOCIATION

MONTHLY

ADDRESS ALL COMMUNICATIONS TO THE AMERICAN GAS ASSOCIATION, Inc.
130 E. 15th St., NEW YORK, N. Y.

Vol. II JULY, 1920 No. 7

"What Every Woman Should Know"

With the final ratification of the suffrage amendment the woman citizen of the United States will become not only a voter and a participant in the affairs of her country, state, and community, but will shoulder a certain share in the burden of responsibility. Where in the past it has been hers to criticise, to suggest, to promise; it will be hers to do. May she be ever as valiant, as she has in the past been sure!

The average American citizen knows too little of the ways in which the business of the government is run. There is no greater national need to-day than that of educating our heterogeneous population to a knowledge of civic affairs. Withal the necessity of understanding the nation's business, it is quite as essential, and certainly nearer his heart and treasure for the average voter to understand the municipal organization. And women generally, have not only this ignorance, but also a lack of experience.

What constitutes a community, what contributes to its support, to its growth, to its development—etc.—every phase of local economy should be as well understood by the women citizens of that locality as by the men.

Wherever women control money, and that is everywhere, they should know what to do with it, and how to do it; what becomes of it, and what is got for it;—they should have a practical knowledge of the use of public moneys to which they contribute in taxes, no less than of their own. Wherever women own real estate or property of any kind, and that is everywhere, they should know how to preserve it, how to increase its value;—they should understand as well the development of public properties, roads, parks, schools, libraries, everything that goes into community growth.

In short, whatever affects her interests, directly or indirectly, the woman citizen should understand. Through the newly acquired vote, she should help those men to office who will safeguard the interests of the people. Community welfare is home welfare. In such a social system as this home prosperity is so dependent upon community prosperity that certain results may be brought about in the former only through efforts made in the latter.

What the men of our cities have failed to grasp concerning the relation of the Public Utility to municipal welfare should be brought forcibly home not only to them, but to their wives.

And after all, from the gas company's point of view, the average woman comes in closer contact with their service than does the average man. More publicity might to advantage be directed to the women in the homes.

They are the domestic users of gas.

Get the House in Order

One plank in the platform of the Emergency Committee is to utilize the ability of the individual employee, no matter what his position, to bring about better relations between the gas company and the public which it serves. Papers, discussions, addresses and editorials (one in our June issue) have all preached this doctrine and the awakening of gas company executives to its systematic application and full observance can do the gas industry more good with its public than any other single force. But the potential power for creating good relations that centers in the individual employee must be intelligently directed and unremittingly applied. The Emergency Committee means to shape part of its work to this end.

AMERICAN GAS ASSOCIATION MONTHLY

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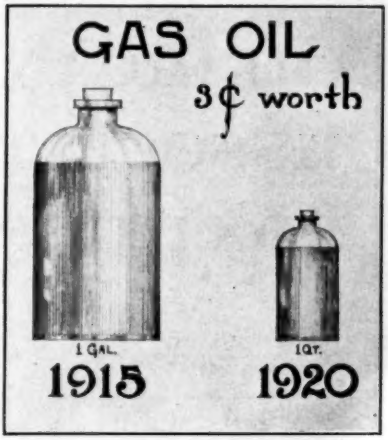
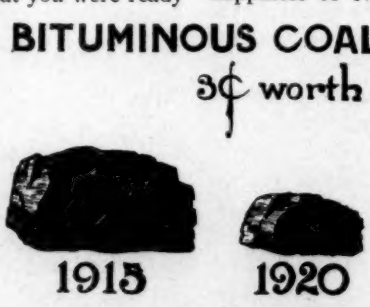
The Gas Man Speaks

You listen to me, Mr. Taxpayer. You're interested in the development of this town; it means a dollars and cents loss to you if it doesn't go ahead. But, in a way, you're deliberately holding it back and that's what I'm going to try and make you see. You were the Chairman of a Committee of the Board of Trade that opposed the gas company's application for an increase in its rates. I don't doubt for a minute that you felt you were working for the best interests of the business men, the householders and the town itself. But, as a matter of fact, you were directly hurting those interests and your own. When we couldn't extend our mains to supply the new Orchard Park section that you and your friends have opened, you said we were simply trying to get out of spending the money and didn't deserve the new rate for which we asked. You're altogether wrong. We haven't got the money, and your opposition to the company merely adds to its difficulties and makes it harder than ever to do the very thing that you want it to do. Now, here are the facts and I want you to look them right in the eye.

We have been going along here for years, supplying gas to this community, with the rates that we can charge regulated and limited by law to a certain fixed sum. That amount was established in 1913, and it was fair enough at that time and sufficient to meet our operating expenses, the interest on our bonds and pay dividends to our stockholders, many of whom are fellow townsmen and friends of yours. We were able to put by the reasonable surplus that every growing business has to have, and we were on a sound and normal basis that brought new capital to our enterprise and made it possible for us to keep pace with the town's development and growth. Then the war hit us and costs began to go up. I don't have to tell you that. But I do want to make you realize that the high cost of living that has hit you has hit us just as hard. You know what things cost you to-day. Has the cost of your food and clothing gone up in the last five years ? Do you pay the people

in your office, or the girl in your kitchen, the same wages you paid five years ago? How about the gasoline for your automobile? I noticed the coal cart backed up at your cellar window the other day. What did your coal cost? As a matter of fact, do you pay the same price for anything that you did before the war? You're paying more for everything but your income has gone up, too. Now, we've had to meet the same burden of increased cost but our income is held down to the old straight line. The cost of all material entering into the manufacture and distribution of gas, as well as the cost of labor, has enormously advanced. Coal, oil and manpower have gone soaring skyward but our revenues follow along the straight line fixed by law, and you were one of the men who said they shouldn't be changed. If you applied that same argument to yourself, you'd go out of business and your family would starve. How about your lots out in Orchard Park? Would you take the same price for them that you were ready to take in 1913? Not on your life. They're just another example of the cost of things and the high values that prevail, but they won't bring what you expect to get if the company cannot supply gas to the people who would be ready to buy and build their homes there. Through a mistaken viewpoint and a misguided opposition, you've crippled the ability of the company to extend its mains and help to make your property worth what you'd like it to bring. How? Simply by hindering us instead of helping us to get fair and just rates that would make it possible to carry on our business in a normal way. It comes squarely home to you after all, doesn't it? But it hits a lot of other people just as hard. Every merchant and every business man in this town and everybody whose prosperity depends upon its growth and development and prosperity, is bound to suffer if they don't wake up and realize that they can't afford to be indifferent to this question. We've got some pride in this place, too, and some interest in its welfare. We've seen it grow and been a part of it. Our homes and families are here just like yours, and there's been a deep satisfaction in feeling that we've carried on a service that was indispensable to the comfort and the happiness of every householder and the prosperity of every business and class of industry whose interests center in this place. But if you continue to be indifferent to the absolute needs of the company that's served you as we have,





you're simply tolerating a policy of starvation that can have only one result. You will bring the growth of this town to a halt and deal it a blow from which it will take years to recover. New industry won't locate here. Factories go to places where the people who run them can have comfortable homes and lead happy lives, and wage earners won't build up your outlying property unless they can have the modern conveniences. Instead of a live, wide-awake, bustling center, you will find your town on a dead end, with new enterprise and new development flowing past you on the main line to places where they recognize the value and necessity of such a service as ours has been, and where the part that public utilities play in the prosperity and growth of a community is appreciated. It isn't reasonable for a business man to shut his eyes to these things. They're of intimate, vital concern to you and a part of your responsibility. If you want your gas company to go on rendering an essential service and to continue to do its part, as it has done in the past, in building up this place and adding to its attractiveness, you've got to support it. You can't afford to hinder and hold back. You've got to come out openly and demand fair play and fair pay! You've got to demand that we shall be allowed to charge rates sufficient to yield a fair return upon a fair investment, for any other course means the strangulation of the company that serves your interests, the frightening off of investors and the complete inability of the company to extend its plant and system to meet the growth of the community and adequately serve the public. How will this affect real estate values? How will it affect the comfort and convenience of you and the other folks who live here? How will it affect trade, prosperity and the general progress of this community which you have seen built up and in which your interest and your life is centered? The census returns and the money in the banks will answer those questions in time, but you won't have to wait until then. Every man, woman and child will soon realize that they've been hurt, and that a mistaken sense of civic responsibility did it.

Those are the simple facts but I'm not going to ask you to take my word for it. What I want you to do now is to round up the members of your committee, the very men who appeared in opposition to our appeal for a reasonable, fair rate for gas. Then you bring them down to the office and I'll turn the books over to you and let you see it for yourself. Our books and records are kept the way the Public Service Commission of this State requires. They're bound to show the facts. If you find that I've told you the truth, will you agree to take your com-

mittee before the Public Service Commission and say that you were wrong, that you've found it's only reasonable and fair for this company to have the rate it asked for? Will you tell them that you've come to endorse that appeal and to ask for prompt and favorable action, so that your own home interests, your business and the welfare of your community will not be sacrificed or jeopardized through the continuation of a condition that is basically un-American and economically false?

I thought you would!

Average Price Received For Gas Sold

BY

150 COMPANIES

1915	1920
$1.09	**$1.26**
Per thousand cubic feet	Per thousand cubic feet

AN INCREASE OF ONLY..... **15 PER CENT!**

Help for the Small Companies

The Executive Committee of the Technical Section at its meeting May 6 passed a resolution requesting representatives of affiliated associations to take up with their Executive Boards the appointment of State Committees to visit the smaller or non-Association member gas companies and secure data on operating conditions. A committee consisting of G. T. Macbeth, Chairman, A. I. Phillips and J. S. Kennedy, was appointed to prepare forms on which this data is to be collected and to tabulate the results submitted by the State Associations.

Through this means it is hoped that the National and State Association will be in a better position to assist the smaller gas companies in improving their operating efficiencies.

Appointments to the Nominating and Papers Committees of the Section were approved.

At the invitation of Mr. William Gould, former Governor of the Gas Sales Association of New England, Mr. Person, Secretary of the Publicity and Advertising Section, addressed the members at their monthly dinner and meeting in Boston on May 7th on the subject of publicity and its intimate relation to sales effort.

At the recent convention in June of the Missouri Association of Public Utilities, Mr. Person presented a paper entitled, "Telling the Story of Gas to the American People."

An Epoch-Making Ruling in Rate Cases

(We are fortunate to be able to present in this issue an article prepared by Judge William L. Ransom of the New York Bar, respecting certain features of the recent rate case of the Consolidated Gas Company of New York. The rulings of the special master in that case, if sustained by the United States Supreme Court, will establish a precedent of great importance in future rate cases.

The treatise is of primary importance to accounting officers of utility companies, but will be found of great interest to executives, engineers and counsel, as well.)

A PRECEDENT of far-reaching importance and interest to those charged with responsibility for the accounts of gas and electrical corporations under the jurisdiction of State regulatory commissions, has been embodied in the rulings of Special Master A. S. Gilbert upon the trial of the equity suit brought by the Consolidated Gas Company of New York in the United States District Court for the Southern District of New York, to restrain the further enforcement of the 80-cent rate for gas, prescribed by the New York Legislature in 1906. A new importance and weight has been given by the Court to the books of account, vouchers, departmental reports, and underlying records of a public utility corporation, as kept by its accounting staffs in the regular course of business, over a period of years; and a deserved recognition has been accorded to the diligent day-by-day labors of the accounting staffs, who have spent weary hours in doing detail work accurately and conformably to the requirements of the Uniform System of Accounts as prescribed by Commission authority. If sustained by the United States Supreme Court upon the ultimate appeal, the rulings made in the Consolidated Gas Company case will greatly simplify and shorten the trial of rate suits in equity and will operate greatly to the benefit of the utilities compelled to carry on business under scrutiny of State regulatory bodies.

In the *Consolidated Gas Company* case, of which the trial has been recently completed, counsel for the complainant company was under the necessity of proving the revenues and expenses of a great gas business aggregating annually nearly 19 billion cubic feet of gas, manufactured in a half dozen different plants, with holder stations, branch commercial offices, mains and service departments, etc., numerous and widely separated. These operating results had to be proved over a period of at least twelve years, and the "book cost" of property had to be disclosed over a period of 35 years. For a single year, the Company's operations involved hundreds of thousands of vouchers, time-cards, work reports, yard and branch office reports, and the like, and the bringing together of these into books of accounts, which in themselves were numerous and ponderous. All of this work had been done by a considerable number of persons in the accounting staff of the Company, some of whom were dead, some were in distant States, and some were still available, if needed, as witnesses. The various daily, weekly and monthly reports which entered into the company's accounts had been made in the regular course by various superintendents and department heads, of whom some were available as witnesses, if needed. For fourteen years the company's books, accounts and operations had been carried forward under the supervision of the Public Service Commission for the First District, which had prescribed a Uniform System of Accounts and a form of Annual Report,

and had supervised and scrutinized the company's accounts and records to the extent deemed requisite for verification.

Notwithstanding these circumstances, counsel for the defendant public authorities, including the defendant Public Service Commission, contended that "strict common-law proof of revenues and expenses" must be produced by the complainant; that all of the vouchers, reports, and underlying records must be put in evidence, and their regularity and accuracy proved, before the books could be received in evidence; that all of the available superintendents, department heads, bookkeepers, etc., must be called as witnesses; that the receipt of coal, oil, etc., must be proved by the testimony of men who saw the coal or oil come in and then weighed or measured it, etc.

Obviously such a requirement of proof would have meant a trial of several years' duration—a delay so great as in itself to work a denial and defeat of justice to the complainant company. In sustaining the course of proof by which the counsel for the company sought to obviate the necessity of so unjust and cumbersome a procedure, the Federal Court has made rulings which "cut the Gordian knot" and give a basis for the more expeditious trial of future rate cases.

In advance of the trial, the complainant company made up and furnished to the defendants copies of the various tabulations which the complainant proposed to offer in evidence as exhibits upon the trial. These had been prepared from the company's books, vouchers, and records; and, likewise in advance of the trial, the complainant threw open its plants, properties, books, accounts, vouchers, records, etc., to the accounting and engineering "experts" of the defendants, inviting them to check and verify or challenge the tabulations or to find anything inaccurately or improperly done in the accounts of the company.

Upon the trial, the books and their authenticity were attested under oath by the head of the company's accounting system; their conformance to the Uniform System of Accounts was demonstrated; the results of an elaborate checking of the books and underlying records by an independent accountant were presented; and then first the books and later the tabulations therefrom were received in evidence, subject (1) to the most rigorous cross-examination; (2) to the defendant's full examination and checking of the vouchers, etc., underlying the books; and (3) to the production and proffering in evidence of any particular vouchers, reports, etc., to which the defendants wished to direct the especial attention of the Court. The defendants and their "experts" having had this full access to the company's properties and accounts and full opportunity to verify or impugn what the books showed, and it appearing that the books of account had been kept, under Commission scrutiny, in the manner prescribed by Commission authority, and that they withstood the examination and checking of the accountant employed by the defendants, the Court held that the books and records were admissible in evidence, in the company's behalf, in proof of the matters therein shown, without "common-law proof" of the books or of the matters comprised within their contents being shown.

In their efforts to frustrate this mode of proof, the defendants and their accountants made a searching and most hostile examination of the company's records, occupying several months of time in a frantic effort to find *something* with which to undermine and attack the work of the company's bookkeepers and accountants, over the long period of

years under scrutiny. That they were unable to find anything indicative of bad faith or substantial error was not unexpected by the company but was a fine tribute to the men who had been doing the work in the company's accounting departments, year in and year out. The defendant's onslaught and its utter failure furnished also another demonstration of the baselessness of the charge, sometimes made or encouraged by demagogues, that the fiscal operations and accounts of great public service enterprises reek with fraud, waste, juggling, manipulation, and mismanagement.

Concerning the ruling of the Court and the probability that it will be sustained on appeal, Ex-Justice William L. Ransom, who tried the case for the complainant, expressed at a recent gathering of gas and electric accountants the view that the holding of the United States District Court was "four-square" with reason and common-sense, and dictated by the obvious procedural necessities of the situation. A Commission may not require a gas or electrical company to keep its accounts in a certain way, examine and investigate those accounts from time to time to be sure of their accuracy and conformance, require a company to file a sworn annual report showing the results of its accounts as so kept, summarize and publish to the world the company's operations as shown in such annual reports, and then disavow the reports, the accounts and the whole thing, as soon as the company comes into dire need of expeditious relief from an oppressive limitation on its rates. The Court has dealt a blow to such hypocrisy. The attitude of the defendant public authorities, if successful, would have made the Commission's system an utter mockery. The Court's ruling gives proper credit and weight to the faithful work of the men who make up the accounting staffs in large enterprises. I have no doubt that this view will ultimately be sustained and will prevail.

The Emergency Committee

Fifty-four men, all leaders in the public utility field, all prominent in the public service, make up the Emergency Committee of the A. G. A. Their purpose is to rehabilitate the credit of a great industry and to awaken the public consciousness to the fact that the welfare of the people throughout this broad land is in jeopardy, because of the false economic position into which the gas business has been forced. Immediate relief is necessary as an emergency measure. With that obtained, thought may well be directed to lightening the burden of regulation and control that has worked such havoc with public utilities. An unprecedented economic condition has clearly demonstrated that the regulation of utilities, as now practiced, is altogether too inelastic to guarantee to either the public or the utility, the measure of protection that it is their right to demand. Personal and business liberty, and freedom for lawful enterprise are basically American rights, which are no more to be yielded than any of the privileges and principles which have made our country what it is. The demagogue and destructionist must be led, or else driven, into sane paths.

Recent Service Letters

Service Letter No. 8, "Notes on the Use of Heavy Topped or Reduced Crude Oils for Gas-Making Purposes," and Service Letter No. 9, "The Coal Supply," were recently mailed to member companies. Additional copies will be supplied on request.

A Letter from Mr. Gill, Chief Engineer of the South Metropolitan Gas Company of London Shortly After His Return to England from the United States

DEAR COL. FOGG:

I arrived safely in England yesterday, and now hasten to write and ask you to allow me, through the medium of the American Gas Association MONTHLY, to thank all those Members of your Association who so kindly showed me their plant and gave me so much valuable information.

Thanks to your generous assistance and to the courteous welcome which I received everywhere, I am pleased to be able to say that my trip was not only a successful but a most enjoyable one, and I shall look forward to making a similar trip on another occasion, and to having the pleasant opportunity of welcoming in London some of the kind friends whom I made in America. I need not say that I shall consider it a privilege to be informed of any of your Members who may be visiting England in the hope that I may be of as much assistance to them as you and some of my brother engineers were to me in your country.

It may possibly interest your Members to know that while in America I visited the gas works of the:

New York Consolidated Gas Co.
United Gas Improvement Co. at Philadelphia.
Boston Consolidated Gas Co.
Charlestown Gas & Electric Co., Boston, Mass.
Providence Gas Co.
Rochester Gas & Electric Co.
Detroit City Gas Co.
People's Gas Light & Coke Co., Chicago.
Milwaukee Gas Light Co., Milwaukee, Wis.
Laclede Gas Light Co., St. Louis.
Philadelphia Suburban Gas & Electric Co. at Chester.
Springfield Gas Light Co., Springfield, Mass.
Michigan Light Co., Jackson.
Hartford City Gas Light Co., Hartford, Conn.

and a number of coke oven plants which were supplying gas to various cities.

Thanking you again most heartily, and with kindest regards.

Yours sincerely,

G. M. GILL,
Chief Engineer.

Everybody's Business

Under this heading, Floyd Parsons, in the *Saturday Evening Post* of June 12th, has touched upon a matter for which there could be no more fitting title. This publication with its popular circulation, reaching into several million homes, will carry a message of direct concern to users of manufactured gas wherever they may be.

To-day, the problems of the gas industry, more than they have ever been before, are Everybody's Business.

GENERAL

CHAIRMEN OF GENERAL COMMITTEES ORGANIZED TO DATE

National Bureau of Standards (Advisory Committee)—O. H. FOGG, New York, N. Y.
Accident Prevention—JAMES B. DOUGLAS, Philadelphia, Pa.
Amendments to Constitution—WM. J. CLARK, Mt. Vernon, N. Y.
Chamber of Commerce, Membership in—CAPT. WM. E. MCKAY, Boston, Mass.
Calorific Standards—J. B KLUMPP. Philadelphia, Pa.
Central Development and Testing Laboratory—W. H. GARTLEY, Philadelphia, Pa.
Co-operation With Educational Institutions—C. A. MUNROE.
Educational—WALTON CLARK, Philadelphia, Pa.
Emergency Committee—P. H. GADSDEN.
Finance—E. H. ROSENQUEST, New York, N. Y.
Gas & Electric Service (National)—W. R. ADDICKS, New York City.
Gas Oil Committee—J. B, KLUMPP.
Gas Securities—RANDAL MORGAN, Philadelphia, Pa.
Funds for Gas & Electric Service—H. L. DOHERTY, New York, N. Y.
National Fire Protection Assn., Membership in—W. R. ADDICKS, New York, N. Y.
Relations with Other Assns., etc. (Formation of Geographic and Company Sections)—L. R. DUTTON, Jenkintown, Pa.
Standard Gas Appliance Specifications—W. T. RASCH, New York, N. Y.
Standard Pipe Threads (International)—W. CULLEN MORRIS, New York, N. Y.
Taxation—P. H. GADSDEN, Philadelphia, Pa.

The Emergency Conference

THE crisis confronting the gas companies of the United States brought to the Emergency Conference held by the American Gas Association in the Hotel Pennsylvania on May 26th three hundred executives of the gas industry who represented nearly four hundred companies in all section of the country. The gathering was unique in the gas business. For the first time the executives and managing heads responsible for maintaining an indispensable public service were brought together to consider a situation of widespread gravity, to decide upon the immediate steps to be taken to relieve an unprecedented condition, and to endeavor by concerted and forceful action to avert the calamity to millions of families that is certain to come, unless an early and permanent solution be found for gas company problems everywhere.

The President of the Association, Mr. Geo. B. Cortelyou, opened the meeting and described the successive steps that have been taken in considering the state of affairs that made this conference necessary. Mr. Philip H. Gadsden, as chairman of the Association's Emergency Committee, was then asked to take the chair. He announced that the morning session would be devoted to the presentation of the situation as it exists nationally and that later in the day, a definite and constructive program outlining the action contemplated would be presented.

Mr. N. A. C. Smith, Chief of the Oil Division of the United States Bureau of Mines, presented a paper on the gas oil situation and Mr. O. B. Willcox, Vice-President of Bonbright & Company Incorporated, and Chairman of the Committee on Public Service Securities, Investment Bankers Association, addressed the gathering on the financial aspects of the public utilities situation. Mr. J. B. Klumpp, Chairman of the Committee of the Executive Board, appointed to investigate the gas oil situation, presented a statement, prepared by the committee, which summarized the information it had obtained subsequent to the publication of Service Letter No. 7 on April 10th. Mr. Oscar H. Fogg, Secretary-Manager of the A. G. A. presented data illustrating the steadily advancing costs of essential gas-making materials and the comparatively stationary rates received for gas.

A resolution was adopted protesting against the wasteful use of gas oil for maintaining candle-power standards in New York, Philadelphia, Brooklyn and other cities where these non-economic

standards are still required. The resolution directed the Chairman of the Emergency Committee to convey its purport to the proper authority in all localities where candle-power standards are prescribed. Another resolution requested the President to appoint a Committee to confer with representatives of the oil producing and refining interests in the effort to provide for preference in allocation of oil for gas-making purposes. This Committee is also instructed to suggest what differential in the selling price of gas must be temporarily established to meet the present emergency, and to make possible the continued production and distribution of gas, in sufficient quantities and of the quality required by the various rules, regulations, ordinances and contracts, under which the different gas companies now operate.

All of the discussions served to drive home the conviction that the conditions under which gas companies are being required to operate have not been exaggerated, nor their gravity unduly emphasized.

The following program of the Emergency Committee was endorsed and adopted, and will constitute the basis of immediate action to be taken.

The gas industry of the country to-day faces a situation so critical that it demands immediate relief if gas companies are to continue to operate until a permanent solution of their problems can be put into effect.

The Emergency Committee of the American Gas Association has two distinct objects—quick and effective emergency relief, and ultimately the readjustment of the relation of the gas industry to the public on a basis which will insure continued and efficient service hereafter.

1. Emergency Relief
   - *a*—Priority in shipment of oil, coal and coke with preference in allocation.
   - *b*—Such immediate and substantial emergency increases in rates as will make possible the continued production and sale of gas notwithstanding the great increases in the cost of oil, coke, coal, labor and other items, and which will in addition restore and protect the credit of gas companies pending a permanent solution of the situation.
   - *c*—Emphatic protests through every possible agency and by personal contact against the present tremendous exports of oil and coal.

2. Permanent Relief
   - *a*—Abolish the candle power standard.
   - *b*—Reduce the consumption of oil by gas companies to the smallest quantity practicable and readjust the heating standards accordingly.
   - *c*—Rates hereafter established should be elastic and quickly responsive to changing conditions of operation.
   - *d*—The rate of return allowed on the investment by gas companies should be materially increased in order to compensate for the decreasing purchasing power of money and further, to strengthen the credit of gas companies to a point where new capital will again flow into the gas industry.

It is proposed to accomplish the above objects by utilizing all proper agencies for that purpose.

Such a program provides for:

1. The distribution of all facts arranged in news form through press associations, news bureaus, etc., through committee headquarters, supplemented by informative material furnished to and placed by gas association members in their local newspapers.
2. Articles in periodicals of wide circulation, Sunday supplements, etc.
3. Local talks by gas company executives before their Boards of Trade, Chambers of Commerce, Rotary Clubs and other classes of civic and business organizations and community gatherings, using for this purpose facts and news to be provided by the Emergency Committee and amplified to meet the requirements of the local situation.
4. Addresses before national organizations or other large gatherings, such as meetings of real estate interests, the building trades and other important groups and industrial and commercial interests, by a group of speakers who could be persuaded to undertake such work.
5. The distribution to State Utility Commissions, the mayors of municipalities, teachers, instructors, legislators, etc., of all facts concerning the gas industry prepared with special reference to the needs of the various groups to which such information is sent.
6. The intensive utilization of the individual employe, no matter what his position or

duty, in getting all the facts concerning the gas situation before the public. Each employe should be provided with information which he can disseminate in the course of his ordinary daily duties. Every gas fitter, collector, complaint man, salesman, in short, every man on the payroll should be made a publicity agent. The full force of the local company's ability to spread the facts concerning this movement should be utilized through suitable window displays, the use of the Balopticon, suitable material printed on backs of gas bills, envelope fillers, etc.

Mr. Gadsden concluded the meeting with an address in which he emphasized the seriousness of the gas crisis. He urged upon those present the necessity for full cooperation with the effort of the Emergency Committee, and explained that a bureau of information had been formed to act under the direction of the Committee. This bureau, Mr. Gadsden said, would be directed by Snowdon H. Summers, a well known newspaper man of long experience and formerly Managing Editor of the *New York Evening Telegram*. It will be the duty of this bureau to furnish to gas companies full information concerning the industry, and which gas company executives and managers would be expected to spread before their public through their local newspapers.

Active work along all the lines indicated is already under way. As further plans of the Emergency Committee develop, this work will be pushed with directness and force. Facts and news matter are being gathered for use by Association members and gas company executives in general.

The addresses and papers presented at the Conference have been published by the Association and distributed to member companies. To those of our members who have not received a copy these will be sent upon request.

It is most important that every gas company arrange to make a generous local distribution of these papers and reports, and for this purpose the Association will supply this material in any quantity desired at the nominal cost of printing.

Mr. Summers has prepared a booklet of suggestions for gas company officials concerning ways and means for securing the right kind of co-operation from the newspapers in this campaign. This booklet has also been distributed to our member companies and is available on request. It tells how to get your story before your community.

The success of the plans as outlined at the meeting is dependent upon the cooperation which we secure from the companies in their own localities.

Notes of the Executive Board's May Meeting

At the meeting of the Executive Board held at the Hotel Pennsylvania on May 26, the applications of 7 gas companies, 3 manufacturer companies and 130 individuals were approved for election to membership.

The Board approved and ordered entered in the Minutes a statement presented by the Secretary-Manager, summarizing the various steps taken in the investigation of the gas oil situation and the use made of the information which the investigation has disclosed. The several Service Letters on this subject which have been presented to our membership, have also been sent to all State Utility Commissions, the Federal Trade Commission, the Bureau of Mines and other Government bureaus, and the statement of the Committee of the Board of which Mr. J. B. Klumpp is chairman, presenting the information derived subsequent to the publication of our Service Letter No. 7, has now been completed and will be similarly distributed.

400 Gas Companies Now Hold Membership
500 By September 30th Is Our Goal

OVER 300 executives of the gas industry met in New York on May 26 at the call of the American Gas Association and adopted a program having the following objects in view:

Increases in rates, thereby establishing a sound basis of credit.

Lowering of standards, necessary to ensure continuation of such an essential service.

Elimination of candle-power requirements wherever enforced.

Here is another striking example of what a national association may accomplish. The A. G. A. is a business organization, conducted for the purpose of serving the best interests of the industry.

The mere fact that there are now 400 gas companies in our membership is pretty good evidence that the Association is doing big things, isn't it ?

Every gas company is benefitted as the result of these activities and it is not fair nor good business for any company to stay on the outside.

The American Gas Association is a recognized factor among other trade organizations and by official bodies whose influence can be most helpful to your business.

This is no time to hesitate—*come in now.*

New Members Enrolled in the American Gas Association, Inc.

May 9, — June 9, 1920.

GAS COMPANY MEMBERS

Smyrna Light, Heat & Power Co.....Paul J. Rutan, Smyrna, Del.
Elkhart Gas & Fuel Co.....J. A. Patten, Elkhart, Ind.
The Valparaiso Lighting Co.....R. J. Cory, Valparaiso, Ind.
Hagerstown & Frederick Ry. Co.....R. Paul Smith, Frederick, Md.
Citizens Gas Co. .....Harold W. Smith, Salisbury, Md.
Albion Gas Light Co.....T. E. Caton, Albion, Mich.
Holland Gas Works .....E. P. Davis, Holland, Mich.
Missouri Public Utilities Co.....E. A. Hart, Cape Giradeau, Mo.
Mexico Power Co. .....Wiley F. Corl, Mexico, Mo.
Washington Gas Co. .....H. W. Ridgeway, Washington, N. J.
Kings County Lighting Co.....Ralph Elsman, Brooklyn, N. Y.
Cohoes Power & Light Corp.....C. A. Davis, Cohoes, N. Y.
Waynesboro Gas Co. .....D. Maurice Wertz, Waynesboro, Pa.
Aberdeen Gas Co. .....Charles A. Howard, Aberdeen, S. D.
El Paso Gas Co.....K. L. Simons, El Paso, Tex.
Utah Gas & Coke Co.....George R. Horning, Salt Lake City, Utah.
Eastern Wisconsin Electric Co.....H. R. Ellis, Sheboygan, Wis.

MANUFACTURERS

American Ironing Machine Co.....H. G. Grosse, Chicago, Ill.
Compania de Cocinas y Calentadores.....A. Serrano, Havana, Cuba.
De Matteis Broiler System Co.....C. Zucca, New York, N. Y.

Active Members

Alabama (1)
California (1)
Delaware (2)
Illinois (1)
Indiana (2)
Maryland (8)
Massachusetts (2)
Michigan (2)
Missouri (1)
New Jersey (28)
New York (2)
Ohio (2)
Pennsylvania (1)
Wisconsin (1)

Accident Prevention Committee

The Safe Operation of Trucks

DURING a severe rain storm recently, a heavy truck was observed running without chains on one of the busiest streets in Philadelphia. The traffic on this street happens to be particularly heavy and ordinary prudence at all times demands that machines using this street be operated with exceptional care. There were a number of other machines ahead of this truck when the traffic officer at the cross street gave the signal to stop to allow the traffic flowing the other way to pass. In the endeavor to stop suddenly, the driver applied the breaks but owing to lack of traction on the slippery surface of the paving, the truck skidded and struck the bumper on an automobile in front of it. Rebounding from this, it swerved and narrowly escaped striking and crushing a pedestrian against the side of a truck parked at the curb.

It may be claimed that the driver was careless in operating the machine at a speed which did not insure perfect control under the circumstances. When it is considered, however, that his truck was travelling at the same speed as all the others in the line, it would seem that every other driver there could have been accused of the same carelessness. If, on the other hand, the brakes on his truck had been adjusted, the tires would in all likelihood have had sufficient traction to hold, and the damage resulting from the rear end collision would have been avoided.

In view of the many accidents reported daily as a result of careless and improper handling of motor trucks, it is clear that a closer study of conditions under which trucks are operated is essential if accidents are to be prevented and excessive costs of the handling of trucks are to be curtailed.

A large concern manufacturing brake linings has made a special study of the question and has reached certain conclusions of interest, regarding the distance in which automobiles running at various speeds can be safely stopped without danger of skidding. It is not necessary to print their tables here, but it is obvious that a heavy truck, loaded to its capacity, requires a greater distance to lose its momentum and that therefore a longer time must be given for the brakes to operate and bring the truck to a standstill than if the machine were empty or of a lesser capacity. These tests can be easily made by the one in charge of the transportation department; various conditions should be tested out thoroughly and the men drilled in them until they are perfectly familiar and at ease with the machine under such conditions. There is a great deal of difference in the operation of heavy and of light trucks. Different makes require different handling, just as they require different styles of driving. But the main point to remember is that a certain distance is requisite for the brakes to act on a certain type of truck, and that this distance varies according to the capacity and load of the truck.

The brakes of trucks, owing to the heavy demands placed upon them, should be frequently tested to see that they will operate according to the standard adopted as a safe minimum. The drivers should be tested in their ability to handle the trucks under conditions presented by heavy traffic and slippery street pavements. If this is done, there can be no doubt but that a great step towards the reduction of accidents due to improper operation of heavy trucks will have been taken. Accidents cannot always be prevented, especially where vehicles in motion are concerned, but it is certain that a good deal towards the elimination of such accidents can be accomplished by intelligent supervision.

Send In Accident Reports

The Committee on Accident Prevention earnestly urges the members of the Association to send to the Chairman, Jas. B. Douglas, 1401 Arch Street, Philadelphia, reports of accidents on the form published for that purpose. Although some reports have been coming in from time to time, the members have not responded as they should have, and consequently the result of the Committee's work of analysis will not be complete unless each member submits the reports requested. If you do not have a supply on hand, the Chairman will be glad to furnish the blanks upon request.

Accidents That Could Have Been Prevented

While a painter was working on an "A" ladder, the sections spread at the base, causing the painter to fall to the floor.

Folding ladders should be equipped with locking devices or spreaders to prevent the occurrence of such an accident.

A machinist attempted to clear a metal shaving from a revolving chuck on a lathe, with the result that one of his fingers was crushed.

An accident that could have been avoided had the machinist stopped the lathe before attempting to remove the shaving. Machinery should not be oiled, cleaned, or adjusted while it is in motion.

A laborer working in a boiler room stepped into an open drain and was scalded by hot water.

If this opening had been kept covered or a guard placed around it, one more danger point would have been removed.

A short step caused a meter reader to fall down a flight of cellar stairs and sprain his ankle.

Faulty stair construction is indicated here. This accident is an illustration of the danger attending the use of stairways having steps of unequal risers and treads. Risers and treads should be uniform.

A machinist while repairing an elevator gate, allowed his elbow to project into the elevator shaft. The ascending elevator struck his arm and crushed it against the side of the gate.

If it were necessary for the machinist to work in such a position as to expose his arm to the danger of being struck by the elevator, the latter should have been locked or left in charge of an attendant helper until the machinist was finished with his work. Greater care on his part would have prevented this accident.

Hot solder splashed in the eye of a workman engaged in removing the top of a meter.

An accident that could have been avoided if the workman had worn goggles to protect his eyes against the flying particles of hot solder.

In order to remove a plug from an overhead service, a fitter stood on a carpenter's saw horse. The wrench slipped on the pipe, causing the fitter to lose his balance and injure his ankle in the fall.

If the fitter had taken the pains to see that the platform on which he was standing afforded a secure foothold, this accident would not have happened.

An automobile, while being repaired, was hoisted by a chain fall to allow a workman to get at the engine from below. The chain broke, allowing the front of the automobile to come down on the workman.

If blocks or jacks had been used to support the car after it had been raised to the necessary height, the car would not have dropped and injured the man working beneath it. Inspection is advisable before using block and tackle or chain falls to see that they are in sound condition and strong enough to stand the strain put on them.

Costs Little—Avails Much

The Fifth Avenue Coach Company has built up an enviable reputation for itself and in New York City, which has so many times been called a heartless place and one cold and unresponsive to the visitor, this progressive transportation system has realized the value of courtesy as an asset. Its conductors are in constant contact with the patrons whose dimes constitute the company's revenue. The gospel of courtesy is constantly preached to these men and an analysis recently made of the individual records of the employees shows the following interesting results:

1. Men courteous under all circumstances 98%
2. Men irritable under great provocation 1½%
3. Men irritable under slight provocation ..... ½%

Even this unusual showing is not satisfactory to the management, which has inaugurated a courtesy contest among its employees, for the purpose of bringing the courtesy record up to 100 per cent.

If the Fifth Avenue Coach Company found their present rate of fare inadequate to meet their cost of operation and provide a reasonable profit and had to appeal to the authorities, we believe there would accompany that appeal the support and good will of the bus patrons of New York, for the company to them is a humanized institution represented by kindly, courteous men who say good morning, who are polite and pleasant in their demeanor and who admirably reflect the sincere desire of this corporation, to accompany good service with courteous treatment at all times. The company and its men know what Cicero meant when he said: "Courtesy avails much and costs little." There is no surer way of securing the good will of the public than in this simple fashion. The demand that the employee be uniformly and unfailingly courteous in all of his contact with the consuming public, should be just as strictly enforced as the demand that he be competent and honest.

In the **Chemical Age** for May there appeared an article, "The Gas Industry and the Petroleum Shortage," by Oscar H. Fogg. Reprints of this have been sent to all company members and additional copies will be forwarded upon request.

Stockholders Widely Distributed

According to the *Evening Telegram* (N. Y.) of May 19, the stock of the Consolidated Gas Company (N. Y.) is widely distributed, there being 8275 shareholders. Eighty-one per cent. individually hold less than one hundred shares and nineteen per cent. individually hold one hundred shares or more. There are 1335 stockholders who hold from one to nine shares each and 2704 who hold from ten to twenty-five shares.

Berwick Gas Company, Berwick, Pa.

Mr. Ehlers was engaged to make an investigation into fuel requirements at the Berwick plant of the American Car & Foundry Company, builders of freight and passenger cars for the Berwick Gas Company. Some interesting new business seems quite possible in cutting steel, drying cores and heat treating tools. Mr. Ehler's recommendations are now before the General Superintendent of the plant for consideration.

Edward J. Brady Awarded the Beal Medal

Mr. Edward J. Brady's paper, "A New Heating Value Indicator," presented at the first annual convention of the American Gas Association in October, 1919, has been awarded the Beal Medal.

In 1897 Mr. W. R. Beal offered to present annually a gold medal to the writer of the most valuable paper presented at each meeting of the American Gas Light Association and this practice was continued by his family after Mr. Beal's death. With the organization of the American Gas Association, Mr. T. R. Beal announced that the award of the medal would be continued, as a memorial to his father, and the award to Mr. Brady is the first made since the American Gas Association was formed.

The report of the Committee appointed to consider papers eligible for this mark of distinction is given below and Mr. Brady's paper is reprinted elsewhere in this issue.

> "The Committee, consisting of A. E. Forstall, J. B. Klumpp, W. E. McKay, and G. B. Cortelyou (Chairman), appointed at a meeting of the Executive Board, May 28, 1919, for the purpose of awarding the Beal Medal for the best technical paper presented at the 1919 Convention of the American Gas Association, have carefully considered all papers coming within the provision of the award, and have unanimously decided that the Medal should be awarded to E. J. Brady, of the United Gas Improvement Company, Philadelphia, Pa., for his paper entitled "A New Heating Value Indicator."
>
> "The Committee have interpreted the terms on which the Beal Medal was offered as limiting consideration to papers of a technical nature and not including committee reports."

Industrial Fuel Engineering Service

Six months ago Mr. W. A. Ehlers of the headquarters staff was called upon by the Fulton Fuel & Light Company, Fulton, N. Y., to make a survey of industrial fuel possibilities in Fulton. Two subsequent calls of one day each has resulted in a considerable amount of new business for the local gas company.

A manufacturer of knives and cleavers has purchased a lead hardening furnace. This is merely a start and will undoubtedly be followed by other larger ones for heat treating.

An oven furnace was sold to a fire arms manufacturer to be used for rib soldering the barrels of double barrel shot guns. This furnace was installed to take the place of a very crude shop built furnace and is about 50% more economical than the old one.

The manufacturer was so well pleased with the spirit and service on the part of the gas company that we had no difficulty in securing an order for a case hardening furnace with 36" x 48" hearth to replace a coal fired Brown & Sharp furnace, also a small oven furnace in which to do forging and hardening of small gun lock springs. There is promise of much more gas fired equipment in the plant which will surely develop as the new furnaces are installed and their efficiency established.

Plans are also under way for a large gas fired installation in the manufacture of pitch coated conduit pipe.

As to the Rate of Return

THE following opinions and decisions of various authorities upon the rate of return which public utilities are entitled to receive on the value of their property used in the public's service, bear upon a question of paramount interest at the present time.

California: City of Redding vs. Northern California Power Company, Application of City to fix the Just Compensation to be paid to the Company for its Property and Rights. Decision of the California Railroad Commission. "We think that the Commission will eventually adopt some such criterion. If applied in this case, a return of 6% may properly be taken as a minimum and a return of 8% as normal, and the difference of 2% between the two when related to the ascertained value of the physical properties and capitalized at an interest rate of 6% might fairly be accepted as a measure of 'going concern' value without doing injustice to any interest."

Rate Research, October 23, 1919, 60.

Wisconsin: Waukesha Gas & Electric Company, application to increase its gas rates. Decision of Wisconsin Railroad Commission granting an increase. "On an assumed fair value of $303,112.00, $24,384.38, means a return of 8.05%. The amount of $2,254.51 charged by applicant to its operating expenses for depreciation in the twelve months ended June 30, 1918, combined with the additional sum of $2,900 included as an item of the increased costs considered in this case, total $5,154.51 or 1.70% of $303,112. The total for depreciation and return is 9.75%, comparison of this return earned in the pre-war years 1914-1916 indicates that it is somewhat high. An increase of 15 cents per M. C. F. of gas appears to be all that should be afforded under present conditions."

Rate Research, October 23, 1919, 55.

Indiana: Connersville Hydro-Electric Light & Power Company (an experiment of Public Service Commission of Indiana to try out "Sliding Scale" feature). "The year's operations have resulted in a surplus over the 6.5% return of $9,136.25 or 1.8% of the value of the property. These circumstances have made possible the first application of the plan by reducing approximately 10% and increasing the rate of return allowed to 7%. The surplus goes into an Excess Earnings Fund, which will be available in case rate fixed in this revision fail to earn the contemplated 7% return."

Rate Research, November 6, 1919, 96.

New Jersey: Public Service Gas Company, application for Increase in its Gas Rates. Decision of the New Jersey Board of Public Utility Commissioners. "The Board, therefore, finds that, using the determination of this Board in the Passaic Gas Case dated December 26, 1912, as a basis, the rate of ninety cents per M. C. F. therein found to be just and reasonable, by reason of the increase in the costs of operation has become insufficient to yield to the company a fair return of not less than 8% on the fair value of the property used."

Rate Research, December 11, 1919, 169.

California: Modesto Gas Company, application to Increase its Gas Rates. Decision of the California Railroad Commission. "The rates as hereinafter established will, in my judgment, be sufficient to enable applicant to fully maintain its service and provide for the growth of its business, and constitute an average increase of less than 8% of the rates now in effect."

Rate Research, February 5, 1920, 291.

Illinois: Freeport Gas Company, application to Increase Rates. Decision of the Illinois Public Utilities Commission. "Taking into consideration the evidence in this case the Commission is of the opinion, and so finds, the company is entitled to an annual rate of return upon the fair value of the property hereinbefore determined of between 7% and 7½%."

Rate Research, April 8, 1920, 23.

City of Springfield vs. Springfield Gas & Electric Company, Decision of Supreme Court of Illinois. "The Commission fixed as a fair rate of return upon a fair value of appellee's used and useful gas property in Springfield 7% per annum." The Court concludes: "The judgment of the Circuit Court of Sangamon County is

therefore modified by remanding the cause to the Public Utilities Commission for further proceedings in accordance with the views hereinbefore expressed and the judgment so modified is affirmed."

Rate Research, April 8, 1920, 26.

District of Columbia: Washington Gas Light Company, application to continue in Effect, Increased Gas Rates. Increased Gas Rates to give a 7% return. Decision of the District of Columbia Public Utilities Commission.

Rate Research, April 22, 1920, 54.

Tennessee: Receivers of Memphis Street Railway Company, Application for increase in Street Railway fares granted. Decision of Tennessee Railroad and Public Utilities Commission. The Commission has determined that a return under present conditions of not to exceed 7½% and not less than 6½% upon the investment as of July 1, 1919 ($11,846,034) shall be allowed the owners of the property from and after July 1, 1919.

The Supreme Court of the United States has recently indicated that under present conditions a return of 7% to the owners of a utility would be inadequate since "annual returns upon capital and enterprise the world over have materially increased" owing to the world war (Lincoln Gas & E. Co. v. Lincoln, 250 U. S. 577): and it is certainly a matter of common knowledge that the competition for capital is now so intense that what were considered reasonable returns before the war are not sufficient to now attract investments. This is especially true in the case of public utilities, and the recent trend of decisions has been to award them in these times 8% returns, and abundant evidence and an abundance of court and Commission decisions were submitted in this case to this Commission which would justify the allowance of 8% to the receivers in this case, although Mr. Armstrong cited numerous authorities supporting the 7% return. Mr. Harris, testifying for the city of Memphis, expressed the opinion that from 7% to 7½% would be a fair rate of return. Mr. Richey, representing this Commission, testified that 8% would be a fair return, and to the same effect was the testimony of Mr. Perkins, representing the receivers. However, after due consideration, this Commission believes its conclusion will at least eventually prove fair to the public and the receivers, and, therefore, the maximum rate of 7½% and minimum rate of 6½% above stated will be fixed.

Public Utilities Reports Annotated, 1920, C. No. 2, 277.

Wisconsin: Wisconsin-Minnesota Light & Power Company, Chippewa Falls, Wis., Application for Revision of Gas Rates. Decision of the Wisconsin Railroad Commission, granting an increase. "In fact the degree of saturation attained leads us to believe that the property should still be considered in the development stage, and that a return of 8% upon it is not to be expected until some further development has been reached."

Rate Research, May 27, 1920, 141.

New York: Consolidated Gas Company of New York against Charles D. Newton, as Attorney-General of the State of New York; Edward Swann, as District Attorney of the County of New York; and Lewis Nixon, constituting the Public Service Commission of the State of New York for the First District.

Opinion of the Special Master (Hon. A. S. Gilbert) appointed by the U. S. District Court, Southern District of New York. "The question of the amount of the return to which the complainant company is entitled was sharply litigated before me. The United States Supreme Court in deciding the suit brought by this company in 1906 (Willcox v. Consolidated Gas Co., 212 U. S. 19) rather indicated that 6% was then a fair return on the value of the property used in complainant's gas business. Since the decision of the prior suit in 1909, there has been a very radical change in business conditions. The investment market of the world is on an entirely different basis than that under consideration by the Court in 1909. Taking into consideration all of the factors which the Courts have indicated as entering into the determination of a reasonable and proper rate of return upon capital employed in supplying gas to the public, I am of opinion that this complainant company is entitled to receive a return of at least 8% on the value of the property used in its gas business."

ACCOUNTING SECTION

A. P. POST, Chairman — A. L. TOSSELL, Vice-Chairman

H. W. HARTMAN, Acting Secretary

MANAGING COMMITTEE — 1920

At Large

ALDEN, CHARLES A., Boston, Mass.
BRUNDAGE, H. M., New York, N. Y.
ERICKSON, HALFORD, Louisville, Ky.
PETTES, W. H., Newark, N. J.
POST, A. P., Philadelphia, Pa.
REES, RICHARD, (Mfr.) Kalamazoo, Mich.
SCHMIDT, WM., JR., Baltimore, Md.
SCOBELL, E. C., Rochester, N. Y.
TOSSELL, A. L., Chicago, Ill.

Representing Affiliated Societies

ARMSTRONG, J. J., Toronto, Can. (Canada)
CHAPIN, C. H. B., New York, N. Y. (Empire State G. & E. Ass'n.)
EATON, H. M., Detroit, Mich. (Michigan)
HAASE, EWALD, Milwaukee, Wisc. (Wisconsin)
HOUGHTON, W. E., Los Angeles, Cal. (Pacific Coast)
HOY, CHAS. W., Glassboro, N. J. (New Jersey)
JAMES, F. M., Aurora, Ill (Illinois)
MAYNARD, H. B., Waterloo, Iowa. (Iowa)
MCCABE, J. B., Dallas, Texas. (South Central)
NORTON, W. F., Nashua, N. H. (N. E. Gas Eng.)
PORTER, EDW., Philadelphia, Pa. (Pennsylvania)
SHEARON, B. P., Hammond, Ind. (Indiana)
STOTHART, E. C., Charleston, S. C. (Southern)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Automobile Cost Accounting—S. J. PALMER, Chicago, Ill.
Merchandise Accounting—W. A. SAUER, Chicago, Ill.
Job Order Systems—W. G. STERRETT, Chester, Pa. Vice-Chairman, F. M. JAMES, Aurora, Ill.
Office Labor Saving Devices—J. L. CONOVER, Newark, N. J.
Papers—H. M. BRUNDAGE, New York, N. Y.
State Representatives—J. W. HEINS, Philadelphia, Pa.
Uniform Classification of Accounts and Form of Annual Report to Public Service Commissions—W. J. MEYERS, New York, N. Y.
Uniform Accounting Nomenclature—W. H. PETTES, Newark, N. J.

Series on Modern Journals for Corporation Accounting

WE take pleasure in announcing that through the Committee on Contributions to the MONTHLY arrangements have been made for a series of articles by Mr. Emil Ulbricht on "Modern Journals for Corporation Accounting" the first of which appears in this issue. In complying with the Committee's request Mr. Ulbricht has announced a tentative plan of treating the subject in four articles, introducing the principles, uses and advantages of schedules as opposed to the cumbersome and practically obsolete Journal in modern corporation accounting. The subjects and schedules to be discussed in each article are:

Article 1: Introduction; General Terms; Construction Work in Progress; Repair and Expense Authorizations; Withdrawal of Property Authorizations; Miscellaneous Authorizations.

Article 2: Gas and Sundry Sales; Miscellaneous Charges; Cash Receipts; Materials and Supplies.

Article 3: Rents for Lease of Gas Plant and Equipment; Miscellaneous Rent Deductions; Interest on Obligations; Taxes; Insurance; Income from Investments; Interest from Other Sources.

Article 4: Classification of Accounts Payable; Storeroom, Stable and Automobile Expenses; Correcting Entries; Interchanges.

Committee on Office Labor Saving Devices

At the 1920 sessions of the Section it was recommended that articles be published by the above Committee on such later developments in office labor saving devices as came to their attention during the year. Two articles descriptive of such devices will appear in early issues.

A meeting of the Managing Committee will be held shortly to consider first drafts of Committee reports, for the 1920 meeting.

Modern Journals for Corporation Accounting, Article 1

By EMIL ULBRICHT, Author of "The Corporate Organization," "Construction Expenditures," The Reorganization," etc.

WITH the enactment of legislation in the several states providing for the establishment of commissions to govern and regulate the business activities of the utilities with respect to interstate commerce, the control of the industry passed from the management to the state. Concurrent with the passage of such laws, these commissions or boards were empowered with the authority to prescribe a system of accounts whereby the various utilities were required to record the financial transactions in a manner which could easily be interpreted.

Prior to the enactment, the utilities were guided in their accounting by a system prescribed by the respective national associations, the tendency at that time also being a standardization of methods and procedure. However, the establishment of these commissions might have possibly confined the accountant in his work and limited him in his activity, yet it did not preclude the possibility of originating and devising systems and records within such limitations. That is entirely up to the accountant.

As is generally known, the principal books of account are the ledger and the journal, all accounting records being one of either these classifications. The former may be subdivided into general and detail or subsidiary ledgers, the subdivision depending upon the nature or quantity of the detail so desired. The general ledger under ordinary circumstances contains the accounts which are necessary in order to prepare the balance sheet and incidentally control and prove the accuracy of the accounts carried in the subsidiary ledgers.

Heretofore, in accounting practice more consideration was given to subdividing the ledgers in order to distribute the work among many assistants, the control being maintained through an account carried in the general ledger. However, in pace with the trend of modern business efficiency, accountants have sought to improve that other component of accounting records, the journal, the latter being in itself what is generally known as a book of original entry, for it is at this point where the information is prepared for posting to the ledger.

Many corporations confine their accounting activities with reference to original entries to such books as the cash book, the purchase and sales journal and another for miscellaneous entries. The purpose of this series of articles is to acquaint the reader with a further subdivision of the journal, designed to meet the accounting exigencies of an up-to-date utility and perhaps be instrumental in having a system such as it is intended to describe introduced elsewhere.

The various journals or accounting records which form the basis of these articles shall be termed schedules and referred to henceforth as such. The advantage of the division of the journal into the many different schedules lies in the fact that it permits the distribution of the work among the several assistants, thereby not only facilitating the work which must of necessity be done but spreading it in many instances upon a sheet where the transactions for a period or year may be seen at a glance. However, of more importance is the elimination of duplicating such information as is required in the preparation of entries

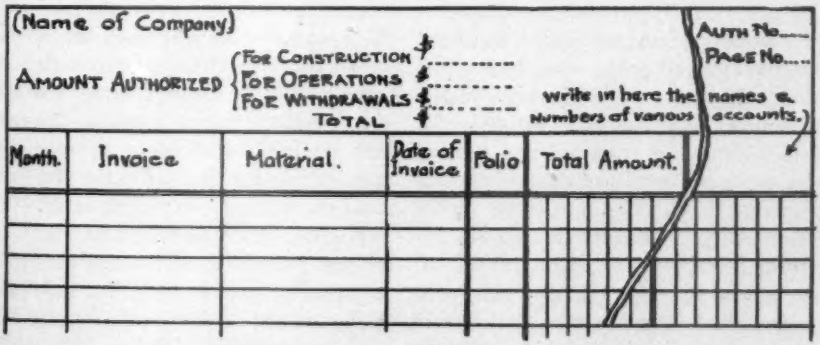
which are alike in character in each accounting period. That alone is to be considered an important factor as a time saver.

The schedules are printed on paper of convenient size, the rulings and columns being planned to provide the different accounting information as becomes necessary to meet the requirements. Each schedule is assigned a number which it retains permanently and which is used as the posting reference, the source of the information being indicated in the folio column of the ledger as "Sc 1" or whichever schedule it represents. When the schedules have served their purpose they are filed in separate binders for future reference.

The schedules which shall be the subject of description in this article are those used in recording the expenditures under various authorizations. It seems that the work of construction is primarily the important factor when a company first begins its operations and therefore the logical subject to discuss at this time. Before any work affecting construction is begun authority from the proper official must be obtained in order to make the charges incurred in its prosecution an obligation of the corporation. Outsiders are cognizant of this fact and therefore reticent about contracting for work unless the proper authority is presented, since the defense of many law suits is based upon *ultra vires*, the contention being that the person connected with the organization acted without authority and therefore his acts were not obligatory upon the corporation.

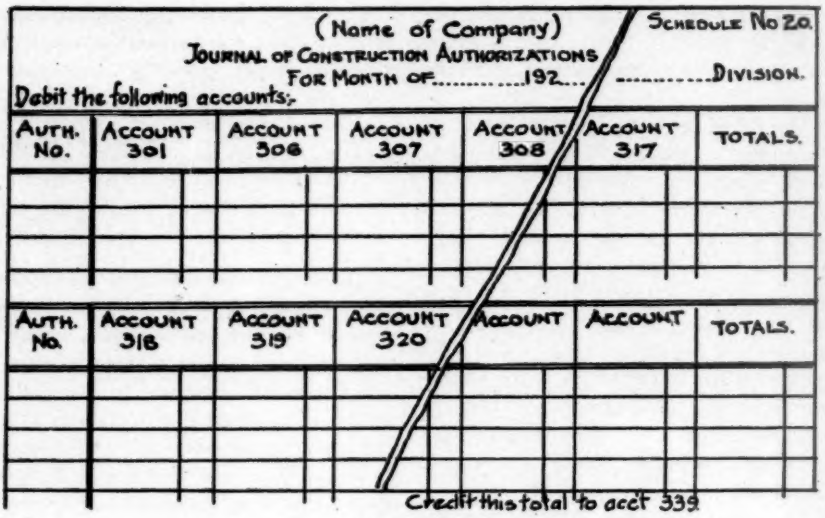
The medium of the authority between the corporation and one of its employees may be termed authorization, which is nothing more or less than a decision of the Board of Directors to prosecute a certain plan of work, while the authority between the outside party and the corporation, the employee acting as its agent, may be accomplished through an order issued by the corporation and therefore binding upon it.

Authorization may be issued for new construction, repairs to construction, transfers of property, withdrawals of property and damages by fire or other contingencies. The accounting for all such work may be brought about through the adoption of the ledger sheet shown in Fig. A. Assuming that an authorization had been issued for new construction, the number and the amount authorized



Size 15" x 27" including 3" for binding

FIG. A.



Size 15"x 27" including 3" for binding

FIG-B-

are entered in the proper places. The accounts which shall be affected are also entered in the proper column, forming the basis of the distribution of the charges for the accounting period when two or more accounts are involved. Upon receipt of an invoice the entry is made upon the ledger sheet, the month being the same as that when it is entered upon the other books as an account payable. The name of the creditor is entered in the second column and in the third the material received or the work done. The other columns are filled in accordingly. All sources of information affecting the financial status are entered and the entries continued until the close of the accounting period. The bookkeeper or the person charged with the keeping of such records is required to check the several entries with the other records, which will be described in subsequent articles, in order to determine if all debits and credits have been made against the proper authorizations.

The ledger sheet is then ruled off and the total amount brought forward to the schedule illustrated in Fig. B. Ordinarily the bookkeeper would make the entry charging the Fixed Capital Accounts and crediting each different authorization. Imagine for a moment the amount of entries involved in a large corporation when there are hundreds of authorizations. Under the schedule system the bookkeeper would summarize the authorizations and distribute the amounts as they affect the several accounts. Hence, one entry would be made to each account in the subsidiary ledger, including the credit for closing the clearing account, thus eliminating the journal were the latter used as the book of original entry.

Fig. B shows one which has been successfully used in the accounting department of a large corporation and found to be the means of simplifying the work and being self journalizing. The schedule may be augmented to meet the demands of the business, using as many

(Name of Company.) SCHEDULE No. 30.

JOURNAL OF REPAIRS & EXPENSE AUTHORIZATION.

FOR MONTH OF.....192

Debit the following accounts:-

AUTH. NO.	ACCOUNT	ACCOUNT	ACCOUNT	ACCOUNT	ACCOUNT	TOTALS
AUTH NO.	ACCOUNT	ACCOUNT	ACCOUNT	ACCOUNT	ACCOUNT	TOTALS.

Credit this total to Acct 489.

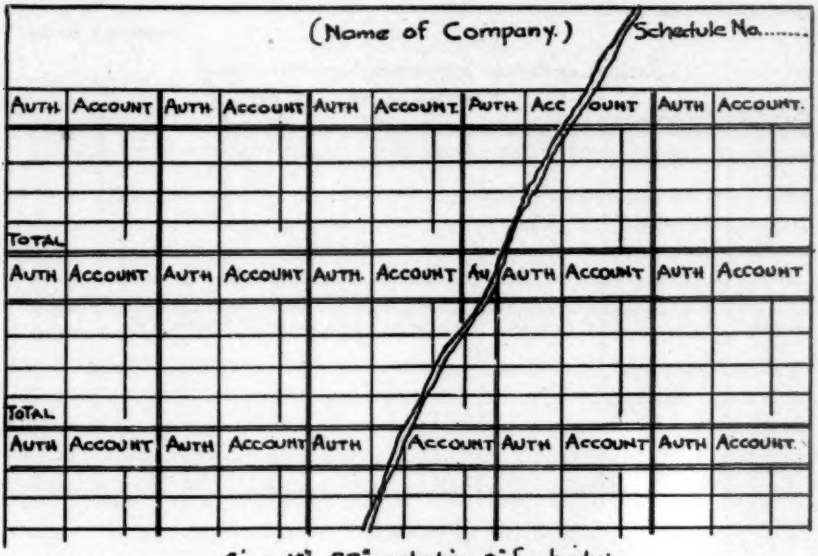
Size 15" x 27" including 3" for binding

FIG. C.

sheets and distributing the costs over as many different accounts as may be the occasion to use. A summary is also made upon the available space of the schedule for the posting of the accounts which are carried in the general ledger.

The same ledger sheet is used for recording the expenditures of the other classes of authorizations although different schedules are used as the medium of posting the amounts. Fig. C is the form of schedule used to record the expenditures of authorizations issued to provide for repairing construction or for other extraordinary expenses. Unlike the schedule used for Fixed Capital Accounts where less than thirty accounts are sufficient to record such construction expenditures, the schedule for repair and expense authorizations is printed without the account numbers. To do otherwise it would require a schedule of unusual size to provide for accounts which might possibly be used but not probably. Therefore the bookkeeper when summarizing the expenditures made under this class of authorizations at the end of each accounting period fills in the number of the accounts. He also provides a summary for posting to the general ledger. Since all charges made to these authorizations are concurrently charged to a suspense account, the credit as indicated by the schedule is of the same amount and when posted closes out the clearing account.

Fig. D is a schedule used to journalize the accounting transactions of all other authorizations. By the use of a rubber stamp the heading is printed at the top of the sheet to provide for either Withdrawal of Property Authorizations or Miscellaneous, such as fire loss, transfer of property, etc. Let us assume that an authorization had been issued to retire from service one generator which when purchased was charged to a Fixed Capital Account. The entry taking it out of the latter account had been made charging it to the suspense account provided for the purpose and a record thereof



Size 15" × 27" including 3" for binding

· FIG-D ·

made on the authorization ledger sheet. When information is obtained that the work has been completed, the schedule is used to reflect the transaction on the records. The amount, including the cost of removal less any salvage received, is charged to a reserve for depreciation and credited to the suspense account, thereby closing out the latter. This is done on the schedule by filling in the numbers of the accounts using black ink for debits and red ink for credits. When Fixed Capital Accounts are kept by divisions or districts and property is transferred from one location to another an authorization is issued and the transfer recorded on the ledger sheet, with the schedule as the medium of reflecting the transaction.

(To be continued.)

Co-operation in Preparing Fire Prevention Codes

Mr. W. R. Addicks, the representative of the A. G. A.'s active membership in the National Fire Protection Association, designated R. B. Harper, Peoples Gas Light and Coke Company, Chicago, and R. S. Doull, Consolidated Gas Company of New York, to represent the A. G. A. at the 24th Annual Convention of the N. F. P. A. at Chicago, May 4, 5 and 6.

Mr. Harper reported the activities of the A. G. A. regarding fire prevention and pledged the assistance of the Gas Industry in reducing the annual fire waste of the country. Several Codes prescribing standards for minimizing fire hazards, with the amendments recommended by the A. G. A. to make them acceptable to the Gas Industry, were adopted.

Some Publicity Precepts

ON an accompanying page are shown several news articles sent to A. G. A. Headquarters by company members who got in touch with their local editors immediately after hearing about the big campaign that is now being waged in behalf of the industry.

The articles are models of their kind and show what can be accomplished when the co-operation between the Emergency Committee, which prepares the articles, and the gas company, which receives them and strengthens them by statements describing local conditions, is one hundred per cent. perfect.

Note that in every case, with the exception of one, the company manager or official has rewritten the material sent him by the Emergency Committee and has permitted himself to be quoted in regard to the coal and gas-oil shortage situation as it affects his company. If you will do likewise with the articles that will be sent you from time to time, you will have no difficulty getting them published.

There are rules for every game, and publicity is no exception. When you have an important statement to give to the newspapers, you should never mail it, but deliver it direct to the editors, or better still, telephone the various newspapers and ask them to send reporters to see you. When the reporters arrive, do not keep them waiting but invite them into your office and treat them with every courtesy. Show no preference and issue your articles to all the reporters at the same time. There should always be one man in your company to whom the reporters can turn for information. It is suicidal to refer newspapermen from one official to another when they are in search of facts and their time is limited. There should be but one man and he should be available either in person or on the telephone during office hours. It is also well to bear in mind that there is nothing more provocative of hostility than the stereotyped reply to an inquiry, "We have nothing to say for publication." Every effort should be exerted to give the information desired.

According to one large public utility company which has accomplished some notable results through publicity, there

are three rules or principles which stand out prominently as essential to success when dealing with the newspapers. They are:

Answer every question.

Never allow a false statement to go unchallenged.

Never side-step or dodge an issue.

And they are as applicable to gas-company publicity as they are to any other.

—o—o—

A Gas Company that is on the Job

Two weeks before the meeting of gas-company executives was held at the Hotel Pennsylvania in New York City, on May 26th, the Rochester Gas and Electric Corporation obtained in one day 41 inches of publicity on the gas and oil shortage problem in two newspapers alone, the *Times-Union* and the *Post-Express*.

This is more publicity in a day than many gas companies obtain in a year, yet it is a regular occurrence in the life of the Rochester Company.

"As a result of the new condition of things," says Joseph P. MacSweeney, Advertising Manager, "representatives of the newspapers visit our offices daily. They have the implicit confidence of those whose business it is to give them the information upon which to base their stories, as they call them, and, to their everlasting credit be it said, this confidence has never been violated. Nor are these men expected to distort news in our interest. All that is ever asked of them, all that ever need be asked of them is that which we have an absolute right to ask, that is, a fair deal, and this we invariably get."

Start to-day and make it your business to keep in touch with the newspapers in your town. If you can't find any news in what you are doing, hire a reporter, and he will find it for you.

—o—o—

Taking its Story to the People

While it is petitioning the Public Utility Commission of New Jersey for an increased rate, the Cumberland County Gas Company of Millville, N. J., is telling its story to the people in a series of advertisements entitled: "A Heart to Heart Talk With Gas Consumers."

The advertisements take up in detail the reasons why the company is asking for an increased rate and particular emphasis is placed on the high cost of all gas-making materials and the inability of the company to earn its dividends.

"A corporation or an individual cannot do business for any great length of time at a loss," is a statement made in one of the advertisements. "The difference between a utility corporation and an individual, or a company doing business is that they can, at any time, advance the price of their commodity to give them a profit over, and above the cost of same, while a utility corporation is compelled by the laws of the country to go to a commission, appointed for the purpose, to investigate and make fair and equitable rates for their product. The same should be fair and equitable to the utility as well as to the consumer, and it cannot be such unless they can have a reasonable profit over and above the cost of their product."

"It will be a pleasure to us," says the company, "to open our books and our accounts to any parties that are interested, so that the facts and figures given by us can be and would be substantiated in every particular.

The advertisements are unillustrated and are set two columns wide and from eight to ten inches deep.

City May Face Famine In Gas As Ten-Day Supply Diminishes

Impossible For C To Secure C

Residents and Manufacture Consumption to Greatest Po City Over Difficulty—Coal at but One-Half Capacity

Unless an unforseen shipment of gas coal in Rochester is received within the next 10 days the city may go gasless for a period, according to a statement issued this morning by Herman Russell, general manager of the Rochester Gas and Electric Corporation. The company now has a 10-day supply of gas coal on hand, which will enable the operation of the gas coal plant at half capacity for that period. The plant is now operating on half capacity, the rest of the gas production being cared for by the water gas plant.

As it is found necessary to decrease the production of the gas coal plant

GAS COAL SHORTAGE

SERIOUS CONDITION CONFRONTING LOCAL GAS COMPANY AND PRACTICALLY EVERY OTHER GAS COMPANY IN THE UNITED STATES

The shortage of all kinds of coal is felt by the householder, public institutions and manufacturers throughout the country; but no industries are as hard hit as those engaged in the manufacture of artificial gas.

Gas coal is a special grade and its production is limited to a comparatively small number of fields.

The local Gas Company exhausted its supply of coal last December, when all shipments were discontinued, on account of the coal miners' strike, and since that time has made every effort to accumulate a reserve supply but without success.

The local company has been out of gas coal for three days, which is the first time that this condition has existed for many years. During the war there was not a time when there was not at least two months' supply in reserve.

They have not been able to secure shipment of a single car of gas coal for six weeks, notwithstanding the fact that they have orders placed with eight shippers. The plant is now being operated by making about two-thirds carburetted water gas and one-third coal gas. The coal gas is being made from steam coal, which is unsuitable for the purpose. The oil used for gas making purposes is also growing very scarce and the shipments are large affected by the conditions that influence coal shipments.

There is a possibility that the local company may be unable to secure a sufficient supply of steam coal and gas oil to maintain an adequate supply of gas, and may be compelled to restrict the use during certain periods of the day.

The company is employing every means to give as good service as possible in the face of the most serious condition that has ever confronted the [illegible]

Public Should Be Told Facts In Regard To Threatened Gas And Oil Shortage Next Fall, Says Smith

That the gas oil situation not only in Gloversville, but all over the country has reached an extremely critical state and that gas consumers may feel the shortage of gas and gas oil seriously next fall and winter, in this city as well as elsewhere in the country, unless the present extreme conditions are alleviated, was the announcement made public today by L. C. Smith, general manager of the Fulton County Gas & Electric Company.

Situation is Serious.

Mr. Smith said that the situation is so serious that it is best to let the public in general and consumers in particular know that they may have to face a gas and gas oil shortage during this next fall and winter far more serious than at any time during the war.

ECONOMY IN USE OF GAS IS NECESSARY

Appeal to Users by R. G. & E. Corporation.

MATERIALS UNOBTAINABLE

Only Ten Days' Supply on Hand, and Steadily Diminishing.

While the Consumption Is Increasing—Appeals to Other Corporations Without Promise of Success.

With the possibility that gas consumption may have to be curtailed, the Gas and Electric corporation today issued an appeal to the public to economize on the use of gas. The company has a reserve of material to carry it along but ten days. The reserve has been steadily shrinking since early spring. While it is the belief that sufficient materials will be received so that nearly the normal supply of gas can be manufactured and distributed, the corporation does not undertake to disguise the seriousness of the situation.

"Conditions have gotten to the point that I believe the public should be fully advised," said Herman Russell, general manager to-day. "There is the possibility that the output of the gas plant will have to be greatly curtailed. I do not think it is the probability, though, for I look for some improvement in conditions, particularly in the matter of transportation. The rump switchmen's strike is by no means cleaned up on some of

plies are rapidly being depleted. The present supply of gas oil can't last much longer and its exhaustion will affect not only the Fulton County Gas & Electric Company, but also every other gas company in the country. Sometime during the last part of this summer or in the fall the shortage is expected to reach the stage where actual suffering will begin, because of the gas oil shortage, if the present extreme conditions continue," said Mr. Smith. He continued.

"The Fulton County Gas & Electric Company during the war and the reconstruction period that followed, was enabled to give good service, considering the conditions in other cities. But unless something is done to check the depletion of this country's available gas oil reserves shortly, not only [illegible]

COMMENTS ON GAS SITUATION

Z. T. F. Runner, President of Austin Gas Company Says Gas Industry Confronted by Serious Condition.

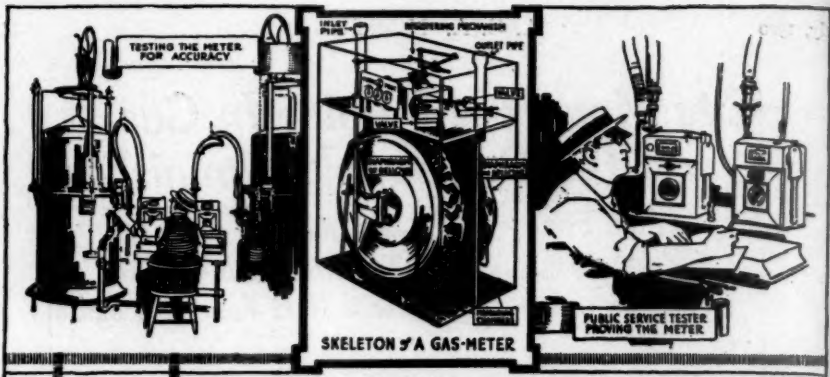
A letter received by Z. T. F. Runner president of the Austin Gas Company, as a member of the American Gas Association, makes the following comment on the situation that confronts the gas companies:

"At a meeting of the Executive Board of the American Gas Association held in New York on April 22, a discussion of the serious condition which confronts many of the gas companies in the matter of inadequate rates and the unprecedented prices which they are being forced to pay for essential gas making materials led to a resolution requesting the president to call a meeting of the executives of gas companies and representatives of gas company members of the association to be held in New York City on May 26."

"At that time a special committee, which has already been appointed will present a program, the purpose of which is intended to acquaint the consuming public with the facts, to make clear the essential character of gas service and to bring about a widespread recognition of the necessity for immediate relief to gas companies, which unless granted will inevitably lead to a grave concern to every community."

You are urged to have a representative authorized to act for your company in this important matter. It is believed that by prompt and concerted action of the kind proposed much may be accomplished to bring about an improvement in the conditions which now so seriously menace the gas industry."

Samples of Live Publicity by A. G. A. Company Members.



Your Gas Meter is More Accurate Than Your Watch

Put one hundred of the best watches against one hundred gas meters in a crucial test for accuracy, exposed to the same varying conditions of heat, cold, humidity, and the meters will win out every time.

All things considered, the gas meter is one of the most accurate measuring instruments in use today.

Like the registering turnstile in baseball parks, railroad stations and fair grounds, the meter will not operate unless something passes through it. The mechanism is not set in motion and the indicator hands cannot move except as more or less gas passes through the meter and makes them move.

Before a meter is set in your premises, it is thoroughly tested and proved for correct registration by your gas company, or, in certain sections of the country, by meter inspectors employed by the city or state. These inspectors are your trusted representatives and they place an official seal upon the meters, thus certifying to their accuracy.

It is interesting to know that the original mechanical principles adopted in 1844 for the correct measurement of gas still persist. Hundreds of inventors have endeavored to get something better, but they have improved on details only. Today the meter stands as the survival of the fittest. If a more perfect device could be obtained, your gas company would promptly adopt it.

(Insert name of your Company here)

MEMBER OF THE AMERICAN GAS ASSOCIATION

Hardly a week goes by but what some company member of the A. G. A. sends us newspaper clippings slandering the accuracy of the meter. For example:

"The taximeter gets you coming and going, but the gas meter gets you standing still. The gas meter is like a burglar—it does its robbing after dark."

"You still put a quarter in the meter and get ten cents' worth of gas."

This sort of "meter baiting" has reached the stage when it ceases to be funny, and the frequency with which such attacks are made by alleged humorists only makes the task of combating them all the more urgent for every gas company in the United States.

Eighty gas-company members of the A. G. A. are going to publish this meter advertisement in their local newspapers.

Why can't you line up with them and make this advertisement create "good will" for you?

We can fill orders as fast as they are sent to us.

Let us have yours to-day.

Fourth of a series of twelve "good will" advertisements especially prepared for member companies. Price of series complete with matrices in three or four-column newspaper width, $36.00. Price of electrotypes, same size, $48.00. Order immediately.

COMMERCIAL SECTION

C. A. MUNROE, Chairman — LOUIS STOTZ, Secretary — J. P. HANLAN, Vice-Chairman

MANAGING COMMITTEE — 1920

At Large

BARROWS, GEO. S., Providence, R. I.
BARTLETT, C. E., (Mfr.) Philadelphia, Pa.
BENNITT, GEO. E., New York, N. Y.
BOND, C. O., Philadelphia, Pa.
BUCKMINSTER, ROLLIN, Pawtucket, R. I.
BURNS, J. J., St. Louis, Mo.
CHRISTMAN, H. S., Philadelphia, Pa.
CLARK, H. H., Chicago, Ill.
CLARK, W. J., Mt. Vernon, N. Y.
DAVIES, J. E., Chicago, Ill.
DODSON, H. K., Baltimore, Md.
DOULL, R. S., New York, N. Y.
ELSMAN, RALPH, Brooklyn, N. Y.
GASTON, LUTHER, Spokane, Wash.
GOULD, WM., Boston, Mass.
HUNTER, HARRY W., (Mfr.) Baltimore, Md.
JARDINE, BERT H., Knoxville, Tenn.
JASPERSON, R. O., Chicago, Ill.
KARSHNER G. M., New York, N. Y.
KING, THOMSON, Baltimore, Md.
KNAPP, F. H., (Mfr.) Pittsburgh, Pa.
LOEBELL, H. O., New York, N. Y.
MACSWEENEY, J. P., Rochester, N. Y.
MAXON, H. R., (Mfr.) Muncie, Ind.
MUNROE, C. A., Chicago, Ill.
MYERS, J. B., Philadelphia, Pa.
PEFFLY, I. W., (Mfr.) New York, N. Y.
PETTENGILL, H. J., Jr., Woonsocket, R. I.
PISER, THEO. H., Boston, Mass.
POST, A. P., Philadelphia, Pa.
RASCH, W. T., New York, N. Y.
STANNARD, CLARE N., Denver, Colo.
TRUMBULL, G. R., New York, N. Y.
VINCENT, G. I., Syracuse, N. Y.
WRIGHTINGTON, E. N., Boston, Mass.

Representing Affiliated Societies

BARTON, WM. H., Portland, Ore. (Pacific Coast)
BORDEN, A. W., Hastings, Nebr. (Iowa Dist.)
BOWLIN, M. A., Jacksonville, Fla. (Southern)
BRANDES, JEROME, Chester, Pa. (Pennsylvania)
BURKE, E. J., Indianapolis, Ind. (Indiana)
CHAMBERLAIN, G. R., Grand Rapids, Mich. (Michigan)
CRAFTS, H. C., Pittsfield, Mass. (N. E. Gas Eng.)
FLAUT, J. J., New Orleans, La. (South Central)
HANLAN, J. P., Newark, N. J. (New Jersey)
McINTYRE, W. H., Ont., Can. (Canada)
ST. JOHN, JOHN, Madison, Wisc. (Wisconsin)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Sales Development—WM. GOULD, Boston, Mass.
Compensation (Sub)—G. M. KARSHNER, New York, N. Y.
Filling in the Valleys in Gas and Appliance Sales (Sub)—WM. GOULD, Boston, Mass.
Maintenance (Sub)—ROLLIN BUCKMINISTER, Pawtucket, R. I.
Putting Non-Profitable Consumers on a Profitable Basis (Sub)—B. H. JARDINE, Knoxville, Tenn.
Sales Campaigns (Sub)—H. J. PETTENGILL, Jr., Woonsocket, R. I.
Work Schedule (Sub)—G. I. VINCENT, Syracuse, N. Y.
Gas Lighting—THEO. H. PISER, Boston, Mass.
Heating—GEO. E. BENNITT, New York, N. Y.
Industrial Fuel Sales—H. H. CLARK, Chicago, Ill.
Furnace Performance Standards (Sub)—I. LUNDGAARD, Rochester, N. Y.
Improvement of Atmospheric Burners (Sub)—JEROME BRANDES, Chester, Pa.
Proportional Mixing (Sub)—CHAS. C. KRAUSSE, Baltimore, Md.
Recuperation and Regeneration (Sub)—H. O. LOEBELL, New York, N. Y.

Live Issues in the Commercial Section

A MEETING of the Managing Committee was held at Association Headquarters on May 27 at which time several important matters were discussed and the following action taken.

A program for the Commercial Section during the November Convention was approved. In addition to reports of Committees which will be presented in the form of abstracts by the chairmen of Committees, papers on the following subjects will be offered:

"What Real Sales Service Means."
"Why a Permanent Sales Department is Essential to a Gas Company."
"The Extent to Which the Gas Company Should Cooperate with Dealers in the Sale of Appliances or Their Installation."

It was decided to publish the committee reports and forward a copy to each member company in advance of the Convention, with a request that whoever in the company is delegated to attend the Annual Meeting be instructed to familiarize himself with the report and be ready to discuss same on the Convention floor.

In such cases where committee reports contain recommendations, the chairmen will be required to offer some definite suggestions as to how these may be carried out.

The Executive Board has approved a recommendation of the Managing Committee that the Sales Department should be on a permanent basis, either self-sup-

porting or showing a profit, and its head designated by the title of Sales Manager.

It was decided that all member companies be requested to consider these recommendations and that a letter be sent to every company by the Chairman of the Section, calling attention to the desirability of recognizing the Sales Department as indispensable and of giving it proper recognition, both as to name and function.

The Sales Department is a point of contact with the public which should not be broken—the sales force is composed of men who cannot be replaced without training and their services can be utilized to great advantage, during periods when sales of appliances are discontinued or curtailed for good and sufficient reasons, in building up good will for the company, in selling the company's securities locally, in addressing civic bodies, rotary clubs and other organizations, and in properly representing the company in many ways other than in selling appliances.

The committee approved sending to all member companies, the questionnaire, prepared by the Gas Lighting Committee, appearing in this issue of the MONTHLY.

From reports received through the Manufacturers Section it is evident that fixture manufacturers, with but few exceptions, are not particularly interested in developing gas lighting fixtures due to the fact that a market does not exist among gas companies.

To stimulate the interest of fixture manufacturers and gas companies, the Committee has recommended that the Association have a booth at the 1920 Exhibition wherein will be displayed the various types of modern gas lighting fixtures and further to stimulate interest among the manufacturer members, the Association to offer prizes for the most attractive units displayed in the Association booth.

The Use of Gas in the Industries

THE members of the Industrial Fuel Sales Committee are engaged in the preparation of twelve short papers on the use of gas in the industries. The subjects for these papers will be selected at a meeting of the Committee to be held in Chicago on June 17-18. They cover a wide and varied field and will when presented and discussed at the Commercial Sessions at the November Convention, offer the latest information available with reference to the application of gas for particular purposes, as well as methods whereby such business has been secured.

The subjects from which the twelve papers will be selected are:

Internal Applications of Gas Heat.
Brass Melting.
Core Baking.
Newspapers.
Smoke Houses and Butcher Shops.
Galvanizing.
Converting Direct Fired Coal Ovens to Gas.
Steel Treating.
Forging.
Cocoa Roasting.
Auto and Tire Repair Shops.
Drying by Heated Air.
Educational Institutions.
Varnish Boiling.
Japanning.
Vitreous Enameling.
Railroad Shops.
Asphalt Melting.
Refrigeration.
Water Heating.

The authors of these papers are all men of wide experience in the industrial branch of our business and the information which they will give in the papers and the discussion which follows will be of great usefulness and value to all gas companies having this class of business in their territories.

Gas Lighting Committee Suggests Way to Secure Store Lighting

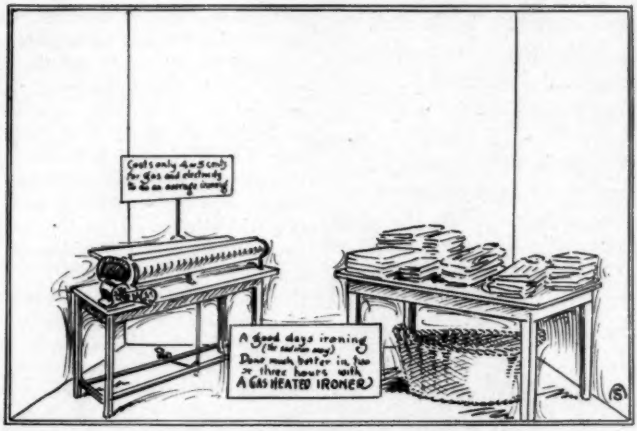
At the regional conference held by the Gas Lighting Committee in Boston, in April, among other points discussed was that of Emergency Lighting vs. Dual Lighting. And it was brought out forcibly that the trouble with emergency gas lighting is, that it is only burned in an emergency, and consequently when wanted is never in repair. With the dual system, such as the telephone companies insist on having, the pilots are kept burning and the lights are inspected every day so that, when wanted, they are available. This system, like the emergency system, brings very little revenue to the gas company. It developed in the discussion that this problem of adequate revenue had been solved by one of the members, by inducing the consumer to put in a combination installation (part gas and part electric) so that both would be burned all the time with enough gas lights in use, should the electric lights fail, to illuminate the store well enough to carry on business. These are his exact words:

"I agree with Mr. ——— entirely in this respect—that there is a possibility of getting quite a bit of lighting that the electric companies have thought they owned. Speaking of department stores, we had a similar case, only instead of going out one night when the stores were crowded the lights went out two different nights, and they had emergency gas lights which failed in the emergency. We then followed up practically all the stores in the center of the city on the matter of dual lighting, and we are getting a considerable amount of business from it. Our thought in that—and we so expressed it to the different store managers—was that they cut out some of the electric lights and substitute gas for a portion of their lighting. Then if the electric lights went out, they would still have a fair light. I put that proposition myself to three or four department stores to see how they would take it. The first man I talked with, the head of a good-sized store of four or five floors, immediately fell for that suggestion. He said it was all right, and, from that time on, he has had dual lighting. He has some gas arc lights and some electricity. We were in the front of the store and there was a big counter where they were selling silk hosiery, selling from $2.00 to $3.00 a pair. He said 'I will never know how much we lost at that counter in the five minutes the electric lights were out. The goods were there for the people to put in their pockets and go away with them. The loss we had there in a few minutes would pay for all the gas light that we might have.' By following that up with the other department stores by our salesmen we have obtained a good deal of gas lighting. Once in two or three weeks our salesmen simply go from store to store the nights that the stores are open, whenever the stores are open and lighted, and make sure that part of those lights are gas lights. It is pretty good business, and it is business that can be gotten."

The New "Sales Department"

We think that commercial men generally will welcome the departure from "Commercial or New Business Department" and other like terms, in favor of the more fitting title of "Sales Department." The Managing Committee of the Commercial Section in urging the recognition of the Sales Department as a permanent and important pillar in the gas company's structure, recommended wisely, and the Executive Board in approving that recommendation, voiced the modern spirit of the gas industry. Sales Department and Sales Manager it is henceforth to be, and such departments, it is recommended, should be organized on a permanent and profitable basis. Recognition of their importance and value to the company is both wise and timely.

Window Display Suggestions for July



Display for Third Week in July

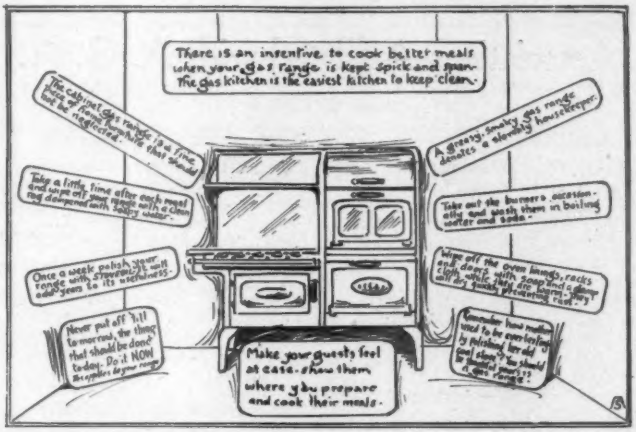
16a **Gas Heated Ironing Machine**

The ironing machine shown in this display has been in great demand, particularly of late when the average householder has been able to afford conveniences of this character. A visit to the department stores shows to what extent people will insist on having the very best in gas equipment.

To those companies which do not have machines of this character to offer a display such as the following will create interest in the ordinary gas iron.

Display for Fourth Week in July

16b



Display for Fourth Week in July

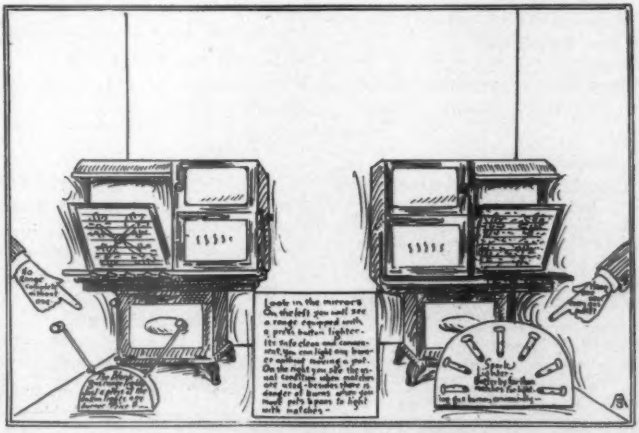
16c **How to Care for the Gas Range**

The main setting for this display should be a cabinet gas range, placed in the center of the window.

A touch of color will add to the attractiveness of the display and for this purpose a background could be made of large blue or green and white checks.

The entire display should be immaculately clean and the range carefully groomed.

Neatly worded cards giving instructions as to the care and cleaning of the range should be placed as indicated.



Display for First Week in August

16d **Gas Stove Lighters**

Two ranges identical in design are used—one is equipped with a lighter ,the other has burnt matches and paper tapers strewn on the drip pan and about the front of range. Mirrors are placed in a position over each working top so that the burners are visible. Three or more lighters are placed fan shaped in a holder at the left and on the right. It might be well to show the small file lighter.

NOTE.—The range with the lighter is piped with gas and the lighter is to be kept going.

Associations Affiliated with A. G. A.

Canadian Gas Association

Pres.—V. S. McIntyre, Kitchener, Ont.
V.-Pres.—C. S. Bagg, Montreal, Que.
E. H. Caughell, St. Thomas, Ont.
Sec.-Tr.—G. W. Allen, 19 Toronto St., Toronto, Can.
Conv., 1920, Aug. 27-28—Ottawa.

Empire State Gas & Electric Association

Pres.—Horace L. Mann, Buffalo, N. Y.
V.-Pres.—H. W. Peck,
C. G. M. Thomas.
Treas.—E. H. Rosenquest.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.

Illinois Gas Association

Pres.—W. M. Willett, Aurora, Ill.
Sec.-Tr.—R. V. Prather, DeWitt-Smith Bldg., Springfield, Ill.
Conv., 1921.

Indiana Gas Association

Pres.—W. W. Goodrich, Winchester, Ind.
V.-Pres.—J. D. Forrest.
Sec.-Tr.—E. J. Burke, Citizens Gas Co., Indianapolis, Ind.
Conv., 1921.

Iowa District Gas Association

Pres.—W. W. Taylor, Omaha, Neb.
Sec. Tr.—H. R. Sterrett, Des Moines Gas Co., Des Moines, Ia.
Conv., 1921.

Michigan Gas Association

Pres.—E. C. Campbell, Benton Harbor, Mich.
V.-Pres.—J. W. Batten, Detroit, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., 1920.

New England Association of Gas Engineers

Pres.—W. F. Norton, Nashua,N. H.
V.-Pres.—V. E. Bird, New London, Ct.
Burton Smart, Portland. Me.
Sec.-Tr.—J. L. Tudbury, Salem, Mass.
Conv., 1920, Feb. 18-19—Boston, Mass.

New England Gas Sales Association

Gov.—William Gould, Boston, Mass.
Sec.—H. J. Pettengill, Jr., Woonsocket, R. I.
Treas.—W. T. Pease, Boston, Mass.

New Jersey State Gas Association

Pres.—F. R. Cutcheon, Long Branch, N. J.
V.-Pres.—Jacob B. Jones, Bridgeton, N. J.
Sec.-Tr.—H. E. Mason, Long Branch, N. J.
Conv., 1920, April—Philadelphia.

Pacific Coast Gas Association

Pres.—A. B. Day, Los Angeles, Calif.
V.-Pres.—L. B. Jones, San Francisco, Calif.
Sec.-Tr.—Henry Bostwick, 445 Sutter St., San Francisco, Calif.
Conv., 1920, Sept. 21-24—Portland, Ore.

Pennsylvania Gas Association

Pres.—J. H. Keppleman, Reading, Pa.
V.-Pres.—E. L. Smith, Towanda, Pa.
Luther Gaston, Lebanon, Pa.
Sec.-Tr.—W. O. Lamson, West Chester, Pa.
Conv., 1921.

South Central Gas Association

(formerly Texas Gas Association)

Pres.—P. E. Nicholls, Galveston, Texas.
V.-Pres.—C. B. McKinney, Dallas, Texas.
F. L. Weisser, San Antonio, Texas.
Sec.-Tr.—C. H. Seidenglanz, 1501 Commerce St., Dallas, Texas.
Conv., 1920.

Southern Gas Association

Pres.—Noble Clay, Winston-Salem, N. C.
V.-Pres.—E. S. Dickey,
J. H. Haggerty.
Sec.-Tr.—M. A. Bowlin, 218 W. Forsyth St., Jacksonville, Fla.
Conv., 1920, June 22, 23, 24—Norfolk, Va.

Wisconsin Gas Association

Pres.—Bruno Rahn, Milwaukee, Wis.
Sec.-Tr.—Henry Harman, 182 Wisconsin St., Milwaukee, Wis.
Conv., 1921.

OTHER ASSOCIATIONS

Natural Gas Association of America

Pres.—Harry J. Hoover, Cincinnati, Ohio.
Sec.-Tr.—Wm. B. Way, 904-5 Oliver Bldg., Pittsburgh, Pa.
Conv., 1921—Cincinnati, Ohio.

Society of Gas Lighting

Pres.—Alex. H. Strecker, Newark, N. J.
V.-Pres.—W. Cullen Morris.
Sec.—Geo. G. Ramsdell, 130 E. 15th St., New York, N. Y.
Treas.—Wm. J. Welsh.
Conv., 1920.

Southwestern Electrical and Gas Association

Pres.—Burr Martin, Dallas, Texas.
V.-Pres.—A. Hardgrave,
C. E. Corder,
A. H. Warren.
Sec.—H. S. Cooper, Slaughter Bldg., Dallas, Texas.
Treas.—J. B. Walker.
Conv., 1920—Hotel Galvez, Galveston, Texas.

MANUFACTURERS SECTION

W. GRIFFIN GRIBBEL, Chairman — **GEORGE S. BARROWS, Vice-Chairman**

W. W. BARNES, Secretary

MANAGING COMMITTEE — 1920

At Large

BARNES, W. W., New York, N. Y.
BARROWS, GEORGE S., Providence, R. I.
BRILL, A. P., Pittsburgh, Pa.
BRUCE, HOWARD, Baltimore, Md.
COLLINS, D. J., Philadelphia, Pa.
CONROY, J. P., New York, N. Y.
CRANE, WM. M., New York, N. Y.
DEHART, J. S., Newark, N. J.
GRIBBEL, W. GRIFFIN, Philadelphia, Pa.
HUTCHINSON, W. P., Bridgeport, Conn.
LOEMEYER, H. B., New York, N. Y.
MASON, SIDNEY, Gloucester, N. J.
NORTON, HARRY A., Boston, Mass.
PEFFLY, IRVING W., New York, N. Y.
REES, RICHARD, Kalamazoo, Mich.
ROBERTS, EARL W., Detroit, Mich.
ROPER, GEO. D., Rockford, Ill.
SCHALL, H. D., Detroit, Mich.
STITES, TOWNSEND, Gloucester, N. J.
WICKHAM, LEIGH, St. Louis, Mo.

Representing Affiliated Societies

BABCOCK, C. B., San Francisco, Cal. (Pacific Coast)
BARTLETT, C. E., Philadelphia, Pa. (Pennsylvania)
CHAPIN, C. H. B., New York, (Empire State)
ECCLES, GEO. W., Waltham, Mass. (N. E. Gas Eng.)
GIBSON, W. R., Toronto, Can. (Canadian)
HOWSMON, G. M., Atlanta, Ga. (Southern)
LONG, H. J., New Brunswick, N. J. (New Jersey)
MCCULLOUGH, CHAS., Milwaukee, Wis. (Wisconsin)
MILLER, THOS. D., Detroit, Mich. (Illinois)
SEIDENGLANZ, C. H., Dallas, Texas. (So. Central)
SCHALL, H. D., Detroit, Mich. (Michigan)
WARREN, W. M., St. Louis, Mo. (Iowa Dist.)
WESTON, J. A., Lansing, Mich. (Indiana)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Membership—WM. M. CRANE, New York, N. Y.
Apparatus Makers—D. J. COLLINS, Philadelphia, Pa.
Nomination—WM. M. CRANE, New York, N. Y.
Exhibition—W. GRIFFIN GRIBBEL, Philadelphia, Pa.
Illustrated Lectures—GEORGE S. BARROWS, Chairman
Division of Meter Manufacturers—DONALD MCDONALD, Chairman, W. P. HUTCHINSON, Vice-Chairman
Division of Gas Range Manufacturers—WM. M. CRANE, Chairman, I. W. PEFFLY, Vice-Chairman
Division of Water Heater Manufacturers—H. J. LONG, Chairman
Division of Office Labor Saving Devices Manufacturers—H. B. LOHMEYER, Chairman, E. J. FERRIS, Vice-Chairman
Division of Heating Appliance Manufacturers—GEO. S. BARROWS, Chairman
Division of Industrial Appliance Manufacturers—S. TULLY WILLSON, Chairman
Division of Lighting Appliance Manufacturers—J. P. CONROY, Temporary Chairman
Division of Apparatus & Works Manufacturers—J. S. DEHART, JR., Tempory Chairman
Division of Supply Manufacturers—R. MUELLER, Temporary Chairman
Division of Accessories Manufacturers—B. RYAN, Temporary Chairman

"Success waits upon ability and loyalty, Let's go!"—*Geo. B. Cortelyou*

Company Member

The Seal of

STANDARD PRODUCT AND ASSOCIATION SUPPORT

All company members, Manufacturers Section, are urged to use the above emblem on all stationery, catalogues and literature as company members of this Association.

Surface Indications

There is unquestionably vocational esprit de corps about the Telephone. Whether this has its origin in the well considered ably expressed advertising—straight forward paid for space—or in the recurrent epic of the girl who stuck to her switchboard and warned the valley of the breaking dam, does not particularly matter. The thing that does matter is that both these elements as well as many others are put to their fullest usefulness, used consistently as though part of a plan.

In the recent war the Allies made slow progress until there was evolved the Unified Command, after which things began to move. Fate put her finger on Foch, Foch consequently goes into the glorious pages of world history; bear in mind, it might have Joffre, Haig or Pershing. The co-ordination of movement finally won: hence the Panama Canal or any other colossal undertaking. Now there are evident in the high places signs of an awakening to the possibilities of a Unified Command in presenting the Gas Industry to the people of the United States; a Unified Command to combat the forces of suspicion, recoil, and distrust. These forces, like the Boche Armies, are active, possessed of an unhallowed strength, sustain their life on scant nourishment, and overrun the land like dandelions or locusts. Any shallow, evil soil furnishes a crop.

We will live to see the time when it will be honorable to have been identified with the Gas Industry. Murder will out, and the financial murder now being done us will re-act. Perhaps this will only be seen in the altered public attitude of ten or twenty years from now, but it will come.

The RIGHT thing has always survived in the history of our United States. As someone has said, the United States is not a place, it is a Nation. Founded upon no race prejudice, no race inclination;—founded upon an idea, an ideal. In spite of ourselves we are individually a race of idealists. We came out of an expensive experience without a slice of Mesopotamia or Africa. We have, however, a portion of Belgium—the hearts of the common people.

Statistics

This subject has been discussed from time to time as one of the vital needs in the manufacturing field. The information which Manufacturer Company Members are seeking as to the volume of their business is not being furnished as freely as we had hoped.

Manufacturers are again asked to cooperate in the preparation of this work in order to permit of its tabulation, and an appeal is made to those companies who have not responded to this request to send what information they can to the Secretary of the Manufacturers' Section at once. If this is done, the statistics will be ready for distribution to Manufacturer Company Members of the Association at our next annual Convention.

So far we have compiled the following data:

Water Heaters	5 companies reporting—sales for	1919	$3,672,716.40
Domestic Gas Ranges	11 companies reporting—sales for	1919	7,676,816.78
Hot Plates, Cookers, Cooking Appliances, etc.	7 companies reporting—sales for	1919	304,283.97
Combination Ranges	4 companies reporting—sales for	1919	885,800.00
Industrial Appliances	1 company reporting—sales for	1919	611,634.81
Gas Apparatus	2 companies reporting—sales for	1919	1,471,056.24
Gas Tubing	Annual production in the U. S. A.		25,000,000 ft.

It would be interesting to know the exact amount of business done in the Manufacturer division of the industry.

Gas Lighting—Is It Passing?

An effort was recently made to ascertain the true facts pertaining to the subject of gas lighting, through the opinion of the trade, its present status and future promise, by means of a questionaire which was sent to some thirty of the most prominent fixture manufacturers in the country asking for frank replies in order that a reliable conclusion might be reached.

The outcome of this trade investigation developed the fact that manufacturers of lighting equipment had discontinued the making of high grade gas lighting fixtures for the reason that gas companies would not buy them.

So far in the history of the development of illumination gas remains the most natural form of manufactured light and the most beautiful. If perfect fixtures be rightly installed, the illumination which results, is the nearest approach to the light of day that we have yet been able to produce for ordinary usage.

With the advent of the pilot ceased the old argument of "less handy"—and there is no reason why gas lighting fixtures should not be as artistic as electric fixtures.

Several years ago when Electricity became a potent competitor in the illuminating field that industry was flooded with a great number of young engineers who realized the commercial possibilities and who played the game for all it was worth. Builders and owners of homes and office buildings were besieged with contracts for wiring and before the gas industry had winked the sleep from its eyes, this country had harnessed the current from the clouds, and gas lighting had been outdone. The secret of the thing lay entirely in the fact that electricity for illumination was boomed. What the gas industry needs to-day is the very thing it lacked then—ideas and the enthusiasm to turn them to account.

Is there any reason why the gas industry should not be able to offer as varied and as artistic a line of fixtures as the electric industry? For example:

For a number of years the glass shade was the vogue for use on home lighting fixtures, and one saw shades that ranged from the cheapest materials to the rare creations made possible with Tiffany glass. And then the glass shade was out-classed by those home-made and of silken stuffs. And for a time the electric bulbs were made more pleasing to the eye with delicate silks, light weight tapestries, tassels, fringes, etc. The gas industry found it necessary to copy its more enterprising neighbor in order to sell fixtures at all—and finally gave up with the argument that fabrics were unsuited to the gas lamp because of the fire danger. And there they began to drop out of the running, for when the vogue says silken shades, why silken shades win, and with them whatever light is best suited to their use.

Now we are living in an age of parchment shaded drawing room lights. Some ingenuous designer revived the old Italian and Spanish patterns and we have shades of finest parchments, hand made and hand colored, and the glass and silken varieties are hopelessly passé. The manufacturers of electric fixtures jumped at the new vogue and converted it into dollars and cents; the gas companies are still selling glass shades. And they'll go on selling glass shades until some wide awake dealer in ideas reads a riot act. And gas lighting will remain

where it is just as long as manufacturers and salesmen believe that its day has waned.

Let's get busy. Let's agree that its the fixture that makes the demand. Let's create some fixtures that home makers will want to buy—let's get beauty and brains on the job, then see where gas lighting stands in the game. And after the manufacturers have done their best, let the salesmen do their part in selling the new ideas. For the commercial man is largely responsible for the amount of gas consumed in illumination.

In the last analysis, it is not gas itself, it is not because it is less efficient, because it is less healthy, certainly not because its light is less beautiful—that it is losing out as an illuminant.

It all hinges on the fact that electricity has the enthusiasm, the courage, and the vision of youth; the gas lighting industry has been dozing.

Concerning Our Membership Campaign

Honor Roll

GEORGE W. PARKER,	——	10 Manufacturer Company Members
CLARENCE H. FRENCH,	——	1 Manufacturer Company Member
RICHARD REES,	——	1 Manufacturer Company Member
H. A. NORTON,	——	1 Manufacturer Company Member
J. B. KLUMPP,	——	1 Manufacturer Company Member
HEADQUARTERS,	——	6 Manufacturer Company Members
H. J. LONG,	——	1 Manufacturer Company Member
CHAS. T. AARON,	——	1 Manufacturer Company Member

Our Membership Campaign is not making good. It is not meeting with our expectations. At the first annual convention last November the Manufacturers' Section of the A. G. A. set for itself a goal of 300 company members to be attained before the following autumn. At that time we had 173 members; now, more than six months later we are standing 195, strong—but not strong enough. Where is the help that has been assured us from time to time by those representatives of companies who already belong?

What we need is more class spirit, a bigger bunch of rooters. Let us all lend our voices and our enthusiasm.

It doesn't take argument to show that the interests of Manufacturers are bound up with those of the gas industry generally. What helps either, helps both—and what hurts—well that goes without saying.

Mr. A. P. Brill in his address at our last Convention briefly speaks on this subject and it is pertinent at this time that his remarks be given publicity. Mr. Brill states:

"Our membership, its size and the interest it manifests in Association activities will decide the issues of to-day and the future. A good membership will insure revenue large enough to enable the Association to carry out large programs. If this is not done the Association's development will be dwarfed and it will not assume leadership in the industry.

"This broad Association should have the generous support of all those whose interests are common to the progress of the gas industry, it being an organization fundamentally sound in those particulars

wherein the older associations were weak.

"For the first time in the history of gas association work, this association does, by the nature of its combination of interests and the breadth of its constitution, create the hope, that it will undertake and solve all of the problems common to the industry."

ROOT FOR YOUR INDUSTRY!

As to the Exhibition

The Prospectus of the Second Annual Exhibition under the auspices of the Manufacturers' Section in conjunction with the Second Annual Convention of the Association to be held November 15 to 20 at the Hotel Pennsylvania, New York City, has been distributed to Manufacturer Company Members as well as to other prospective exhibitors.

The Prospectus contains the Rules and Regulations governing the Exhibition as well as an application for space which is to be detached and mailed to Association Headquarters, and it is stated that the allotments will be made strictly in the order in which applications are received. All firms who contemplate exhibiting at this annual event should have their applications in the hands of the Exhibition Committee at an early date.

The Exhibition this year will differ somewhat from those of former years,—appliances will be segregated from supplies, works-machinery, accessories, etc.—in deference to the engineer, of whose interests care will be taken by placing such exhibits of especial concern to them in the Butterfly room which adjoins the Main Exhibition Hall.

The group of Office Labor Saving Devices will be segregated in order that the accountant will find his group in a convenient location.

Exhibitors To Date

Young Brothers Co.
B. Ryan Co.
Humphrey Co. Div.
Will W. Barnes
The Baltimore Gas Appliance & Mfg. Co.
General Gas Appliance Co.
Quick Meal Stove Co. Div.
The Crandall Pettee Co.
New Process Stove Co. Div.
Welsbach Co.
The Michigan Stove Co.
Barnett Foundry & Machine Co.
Ruud Manufacturing Co.
Famous Oven Manufacturing Co.
The Kompak Co.
Hugo Manufacturing Co.
Reliable Stove Co. Div.
William M. Crane Co.
Walker & Pratt Mfg. Co.
Roberts & Mander Stove Co.
George D. Roper Corp.
General Gas Light Co.
A-B Stove Co.
Reznor Manufacturing Co.
The Ofeldt Gas Fired Boiler Co., Inc.
Detroit Stove Works
Union Stove Works
Pittsburg Water Heater Co.
Weir Stove Co.
Royal Art Glass Co.
George M. Clark & Co. Div.
The Cleveland Heater Co.
The Improved Appliance Co.
Rathbone, Sard & Co.
The Estate Stove Co.
Burroughs Adding Machine Co.
The Lattimer Stevens Co.
The Cutler-Hammer Manufacturing Co.
The Sprague Meter Co.
The Koppers Co.
S. R. Dresser Manufacturing Co.
Precision Instrument Co.
Connelly Iron Sponge & Governor Co.
Pittsburgh Meter Co.
The Roberts Brass Manufacturing Co.
Quigley Furnace Specialties Co.
Republic Flow Meters Co.

Manufacturers of Gas Appliances.....	Booths 1 to 71
Manufacturers of Labor Saving Devices.....	Booths 72 to 82— 97 to 100
Manufacturers of Apparatus, Supplies, etc....	Booths 83 to 96—101 to 112

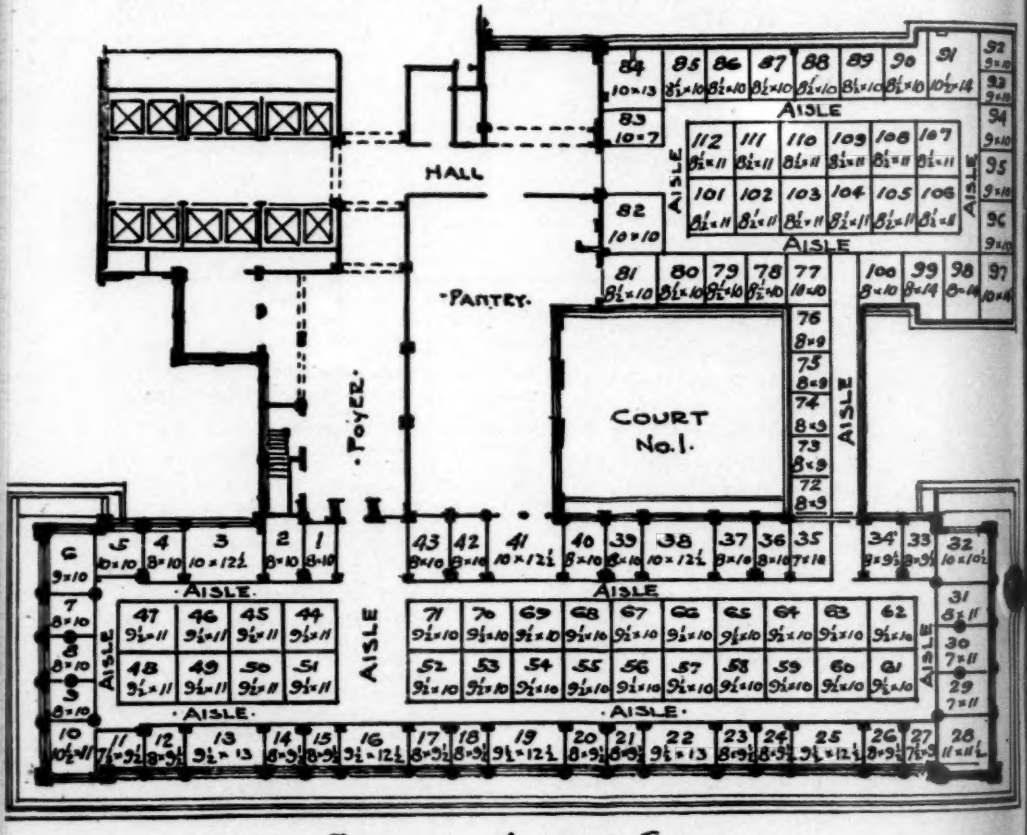
Equitable Meter Co.
John J. Griffin & Co.

In selecting space, Manufacturer Company Members should observe these segregations in order that they can intelligently select their first, second and third choice on making their space application.

The cost decided by the Section this year will be $1.50 per square foot, $25.00 to be paid at the time of application and the balance within thirty days from the date of the notice of allotment by the Committee to the Exhibitor.

The exhibitions of Appliances for the past few years have been of increasing interest, manufacturers aiming to make the event one of great interest to visiting gas men by demonstrating and exhibiting their very latest products. This year from the early interest manifested, it is safe to predict that the coming Exhibition will be more successful and varied in the matter of exhibits than all former exhibitions.

The show will be located on the roof of the Hotel Pennsylvania; affording more space for Executive Meetings, thus remedying any possible congestion such as was evidenced at times last November.



· SEVENTH AVENUE SIDE ·

OFFICIAL DIAGRAM EXHIBITION HALL
ROOF GARDEN AND BUTTERFLY ROOM · HOTEL PENNSYLVANIA.

TECHNICAL SECTION

L. R. DUTTON, Chairman — W. S. BLAUVELT, Vice-Chairman

H. W. HARTMAN, Secretary

MANAGING COMMITTEE — 1920

At Large

BLAUVELT, W. S., Terre Haute, Ind.
CASTOR, W. A., Philadelphia, Pa.
CHUBB, C. N., Davenport, Iowa.
COLLINS, D. J., (Mfr.) Philadelphia, Pa.
CONGDON, R. C., Atlanta, Ga.
DUTTON, L. R., Jenkintown, Pa.
EARNSHAW, E. H., Newark, N. J.
FIELDNER, A. C., Pittsburgh, Pa.
FORSTALL, WALTON, Philadelphia, Pa.
FULWEILER, W. H., Philadelphia, Pa.
HAFTENKAMP, J. P., Rochester, N. Y.
HAZELTINE, L. A., Hoboken, N. J.
HARPER, R. B., Chicago, Ill.
MACARTHUR, DONALD, Jersey City, N. J.
MACBETH, A. B., Los Angeles, Cal.
MACBETH, G. T., Mt. Vernon, N. Y.
NORMAN, O. E., Chicago, Ill.
NORTON, H. A., (Mfr.) Boston, Mass.
OLIPHANT, B. C., Buffalo, N. Y.
PHILLIPS, A. I., Washington, D. C.
STONE, C. H., Rochester, N. Y.
UHLIG, E. C., Brooklyn, N. Y.
WEBER, F. C., New York, N. Y.
WILLIEN, L. J., Boston, Mass.

Representing Affiliated Societies

BROWN, J. A., Jackson, Mich. (Michigan)
CHAPIN, C. H. B., New York, N. Y. (Empire State G. & E.)
CHUBB, C. N., Davenport, Ia. (Iowa)
CORNISH, R. C., Philadelphia, Pa. (Pennsylvania)
HART, J. G., Waukegan, Ill. (Illinois)
HUMPHREYS, J. J., Montreal, Canada. (Canada)
JONES, E. C., San Francisco, Cal. (Pacific Coast)
JONES, JACOB B., Bridgeton, N. J. (New Jersey)
LYONS, B. F., Beloit, Wisc. (Wisconsin)
NEAL, GEO. A., Hammond, Ind. (Indiana)
PAIGE, C. E., Worcester, Mass. (N. E. Gas. Eng.)
SEDBERRY, W. H., Marshall, Tex. (South Central)

CHAIRMEN OF SECTION COMMITTEES ORGANIZED TO DATE

Carbonization—J. P. HAFTENKAMP, Rochester, N. Y.
Cast Iron Pipe Standards—WALTON FORSTALL, Philadelphia, Pa.
Chemical—E. C. UHLIG, Brooklyn, N. Y.
Vice-Chairman, R. B. HARPER, Chicago, Ill.
Deposits in Meters, Services, etc. (Sub)—O. A. MORHOUS, Astoria, N. Y.
Purification—C. H. STONE, Rochester, N. Y.
Consumers Meters—W. A. CASTOR, Philadelphia, Pa.
Vice-Chairman, GEO. WHERLE, Denver, Colo.
Re-Design of Distribution Systems—F. C. WEBER, New York, N. Y.
Disposal of Waste from Gas Plants—L. J. WILLIEN Boston, Mass.
Electrolysis—L. A. HAZELTINE, New York, N. Y.
Vice-Chairman, ROBT. C. NEWBURY, Denver, Colo.
Gas Works Auxiliaries—C. N. CHUBB, Davenport, Ia.
Vice-Chairman, R. A. CARTER, Jr., New York, N. Y.
Nomenclature—O. E. NORMAN, Chicago, Ill
Refractory Materials—W. H. FULWEILER, Philadelphia, Pa.

New Heating Value Indicator

Awarded the Beal Medal as the best technical paper presented at the 1919 Convention of the A. G. A.

EDWARD J. BRADY, Philadelphia, Pa.

THIS paper is to be an account of the origin and development of a new instrument for determining the heating value of certain illuminating gases. By means of the instrument to be described, a determination of the heating value may be made in a few minutes with an accuracy of between 1 and 2%, and it may be made by a person having very little, if any, calorimetric experience.

It is not presented to you with the idea that it may take the place of any of the standard flow calorimeters now in use. The standard flow calorimeter is definitive in its conception and whenever a question arises as to the heating value of a gas for legal or other purposes of importance, its use must be resorted to.

It is unfortunate that, hitherto, the gas industry has had no instrument of intermediate cost and precision, one that could be operated with a reasonable degree of accuracy by the average assistant about a gas works.

This condition necessitated installing an expensive calorimeter equipment cap-

able of the highest precision, in order to make heating value determinations where an accuracy of the order of 1 or 2% would answer very many purposes. Such an equipment requires not only some intelligence, but also considerable experience on the part of the operator, if all of the necessary corrections and observations are to be made. When the proper conditions are not maintained and some of the corrections are neglected, it is possible, even with an expensive outfit, to drift into errors of considerable magnitude.

This paper will be divided into six parts as follows:

Bunsen Flame Characteristics.

A Description of the Apparatus.

Some Results of the Work.

The "Yellow-Tip" Ratio.

A Description of the Instrument. See page 17.

Some Actual Determinations.

Bunsen Flame Characteristics

If illuminating gas is burned in a Bunsen burner in which the primary air is under control and at the base of which no primary air is admitted, we get an ordinary wavering yellow flame disturbed by the slightest zephyr and having no character whatsoever. If we now gradually admit more air at the base, the flame becomes smaller and the yellow becomes less pronounced. Additional air will reduce the luminous portion to a mere yellow tip that surrounds the inner blue cone of the flame. From this point on (see Fig. 1), with an increasing amount of air, the whole flame, but more especially the inner blue cone, becomes steady and takes on a more and more definite shape. The inner cone becomes rapidly shorter and the outer cone decreases in height also, but less rapidly than does the inner blue cone. As the air is still further increased, a ratio is reached where the height of the inner cone is a minimum and the flame begins to increase again until the so-called blow-off point is reached. This occurs when the velocity of the issuing mixture exceeds its velocity of inflammation. This

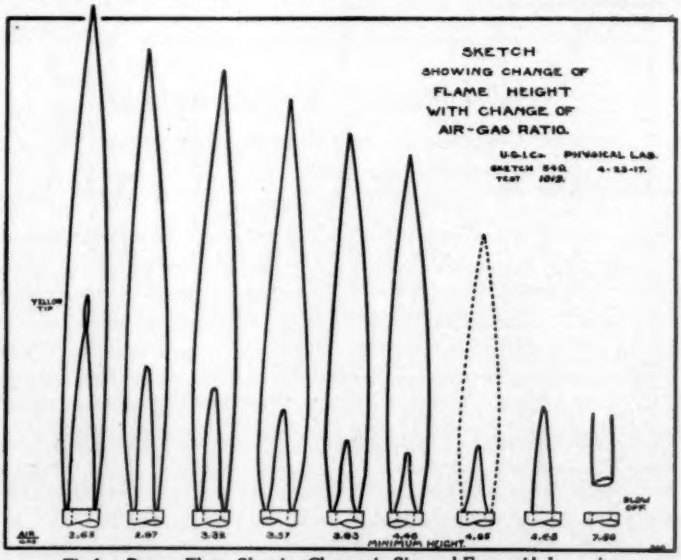


Fig 1.—Bunsen Flame Showing Changes in Size and Form with Increasing Air-Gas Ratio.

latter velocity is greatly reduced by the excess air. As the flame passes the minimum height it takes on an entirely different appearance. The greenish hue changes to a faint blue and the outer flame becomes less prominent, until it finally disappears shortly before the blow-off point is reached. If the burner is of suitable design, with a large mixing chamber and all of the possible variables under complete control, a Bunsen flame is reproducible to a surprising degree of accuracy.

There follows from this the possibility of determining the relations among the numerous variables that enter to cause a change in the shape and size of the flame. These are, in the order of their probable effect upon the dimensions of the flame, as follows: (1) ratio of air to gas in the primary mixture; (2) heating value of the gas; (3) specific gravity of the gas; (4) pressure of the gas at the orifice; (5) temperature of the mixture; (6) barometric pressure; and (7) humidity of the atmosphere. The effects of the foregoing variables upon the size and shape of the Bunsen flame were studied and they will be referred to as Bunsen flame characteristics.

A Description of Apparatus

Figure 2 represents a diagrammatic sketch of the apparatus used in determining the flame characteristics. On the left are shown the two small holders for both air and gas. The gas passes from the holder to the burner proper through a small volumetric governor, (1). The air also passes to the base of this burner by way of a micrometer cock (6), located near the observer's seat. The pressure of the issuing gas just back of the orifice was indicated on a precision pressure gauge (5) capable of measuring pressures to .001 in. water pressure.

The burner and flame under observation were placed inside of a protecting box (11) having openings at the bottom to admit secondary air to the flame which could be observed through thin glass windows. A full sized image of the flame was thrown upon a glass tracing

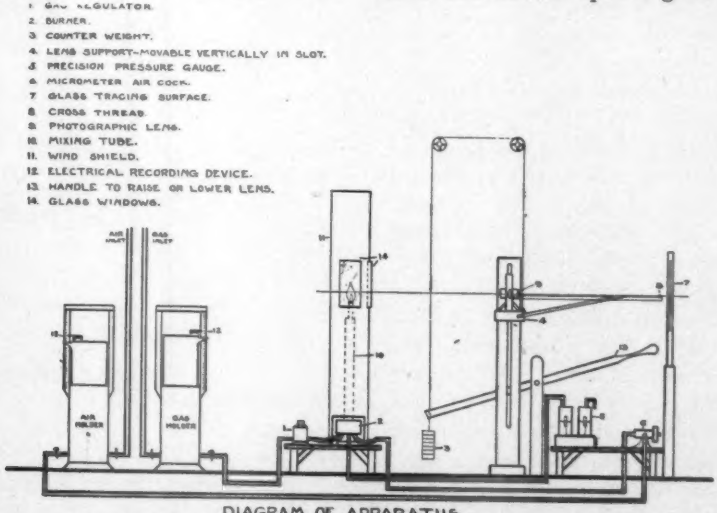


DIAGRAM OF APPARATUS
FOR DETERMINING GAS FLAME CHARACTERISTICS.
U.G.I.Co. PHYSICAL LAB.
SKETCH 207 -4-26-17 - TEST 1918.

Fig. 2

surface (7) by means of a photographic lens (9) mounted midway between the glass tracing surface and the flame. To avoid any possible distortion of the image, the photographic lens was mounted on a vertical slide and it could be moved up and down very accurately by means of a lever (13) within the observer's reach. A counterbalance (3) holds the lens at any point in its travel. Attached rigidly to the lens carriage was a light framework extending toward and almost touching the glass tracing surface. It carried close to the glass, a fine horizontal wire (8), which threw a shadow on the tracing surface. The wire moved up and down with the lens carriage and was always on a horizontal plane passing through the optical axis of the lens. By moving this system slowly up and down and tracing only that portion of the image in close proximity to the shadow of the wire, an image of the flame could be traced, having no distortions whatever. Transparent onion skin paper was fastened temporarily to the glass upon which the image was traced.

The ratio of primary air to gas was determined in the following way. The air and gas holders which were identical, were each of 2 cu. ft. capacity and rather tall. Attached to one of the guides of each holder was a meterstick to which a narrow strip of paper was fastened. Mounted upon the top of each holder was an electrically operated marker (12) with a needle point close to the strip of paper. The two recorders were in series with a contact key placed within the operator's reach. After adjusting the air for any required size of flame, contact was made and the two recorders would simultaneously each mark a small pin prick in the surface of the strip of paper. When the image was completed, contact would again be made, thus marking additional pin pricks in the recording surface. Afterwards the distances between these marks were measured and their ratio determined. To determine both the air and gas consumption, the elapsed time between contacts was measured with a stop watch. A number of such determinations could be made before the holders would empty.

The gas holder would then be refilled from a larger holder of 100 cu. ft. capacity in which a stored sample of the gas under investigation was maintained during the work. It was from this 100'

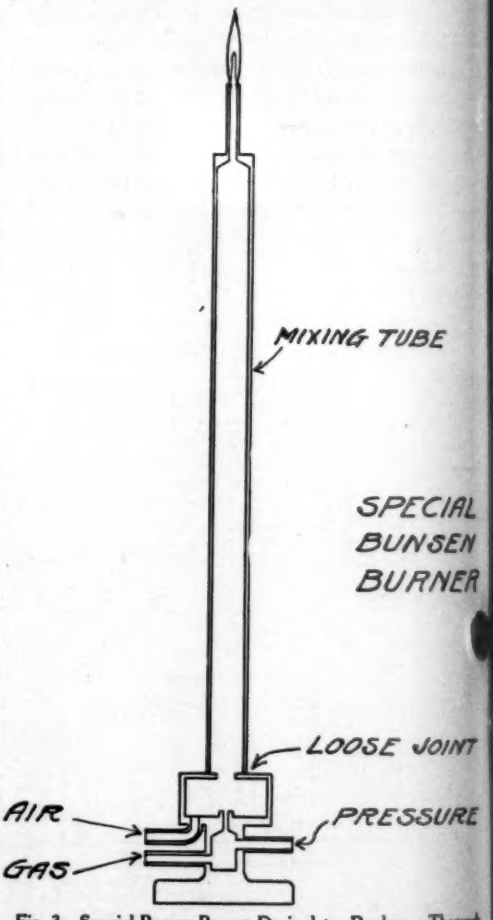


Fig. 3—Special Bunsen Burner Devised to Produce a Thorough Mixture of Air and Gas.

holder that the gas was drawn for specific gravity and heating value determinations by means of a standard flow calorimeter. The special burner designed to give a very steady flame with a thorough mixture of the air and gas is shown in Fig. 3. The large mixing tube merely rested upon the lower part so that flashbacks could easily be vented.

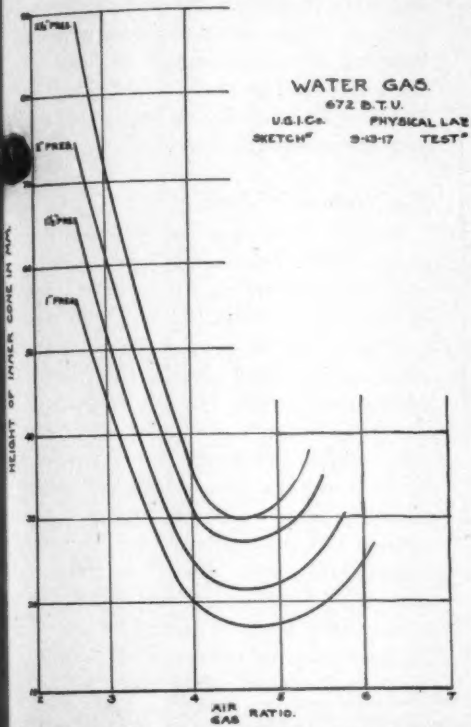


Fig. 4.—Bunsen Flame Characteristics Showing Change of Inner Cone Height With Change of Air-Gas Ratio and Pressure. Carburetted Water Gas. Heating Value Constant.

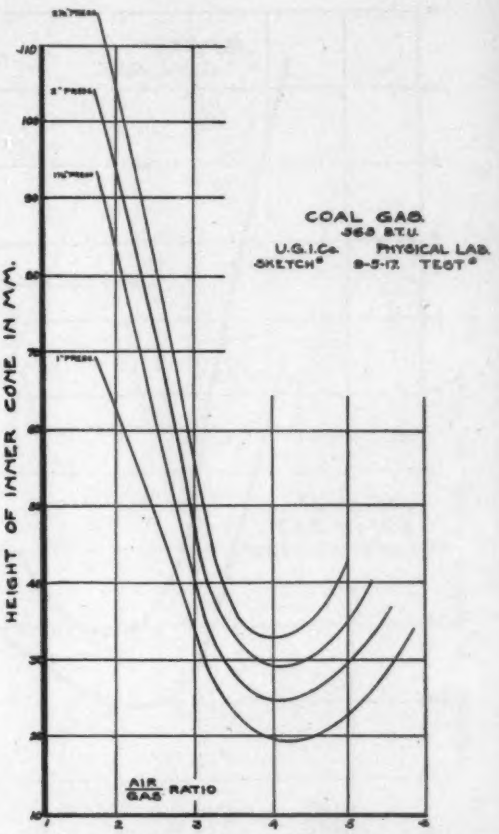


Fig. 5.—Bunsen Flame Characteristics Showing Change of Inner Cone Height With Change of Air Gas Ratio and Pressure. Coal Gas (Stripped). Heating Value Constant.

Some Results of the Work

Some of these Bunsen flame characteristics as determined on the set-up described are shown in Figures 4 to 7 inclusive. Figure 4 shows the relation between the height of the inner cone and the air-gas ratio for carburetted water gas (672 B.t.u.'s per cu. ft.) at four different pressures. Figure 5 shows the same relation for coal gas (565 B.t.u.'s per cu. ft.) at four different pressures. This gas was one of a number obtained by stripping straight coal gas. Figure 6 shows both coal and carburetted water gas of the same heating value plotted on the same sheet. The height of the coal gas flame compared with that of the water gas should be noted, as should also the upper end of these curves occurring at roughly the same ratio, a subject that will be taken up later.

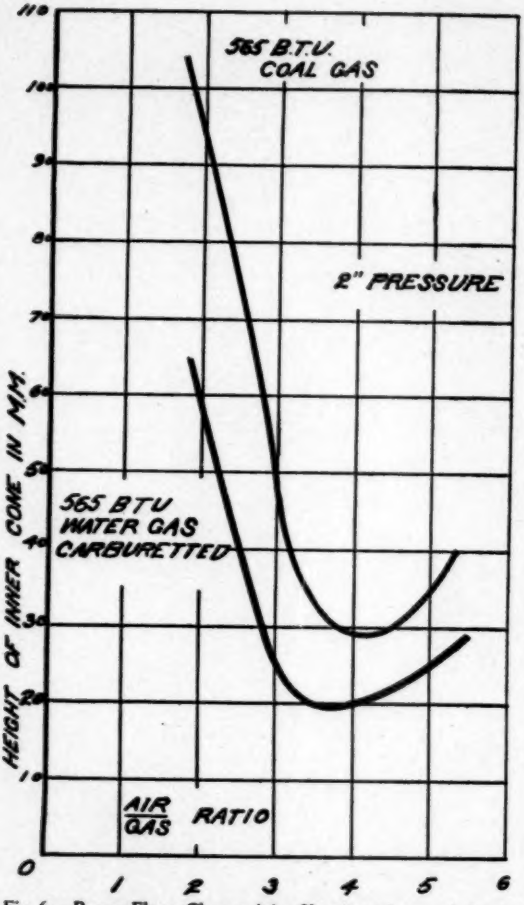


Fig. 6.—Bunsen Flame Characteristics Showing Change of Inner Cone Height With Change in Air-Gas Ratio. Coal and Water Gas of Equal Heating Value Compared. Pressure Constant.

All of the foregoing measurements may be plotted in three dimensions and Figure 7 is an attempt to show in isometric projection the appearance of such a solid. The heavy line produced by an imaginary plane cutting the solid at a constant air-gas ratio should be noted. The ordinates of this curve are the heights of the inner cone. Their rate of change with heating value may be varied somewhat by selecting a different air-gas ratio for the cutting plane, which relation might be used for determining the heating value by measuring the height of the inner cone. Such an instrument was constructed, but since the necessary conditions for maintaining constant all of the other variables were so exacting, it was abandoned in favor of the instrument to be described, which is based upon the disappearance of the yellow tip from the flame.

The "Yellow-Tip" Ratio

Many of the relations between the variables involved were determined. Only one relation, however, will be dwelt upon in detail at this time, since it is the one that forms the basis upon which the instrument is based. This is the relation between the heating value of the gas and the air-gas ratio at the point where the yellow tip in the flame just disappears. In Figure 8 the four groups of curves should be noted. They all represent the relation between the height of the inner cone and the air-gas ratio at the pressure indicated. Each set of four was determined using a stored sample of gas of the heating value indicated. By grouping these curves, it will be noted that for any particular gas, the upper ends of the four curves terminate upon a straight vertical line parallel with the axis, indicating a definite value in the air-gas ratio. The upper ends of these curves correspond with the appearance of the yellow tip, beyond which the height of the inner cone loses its significance, and cannot be measured. This point of appearance is independent of the pressure, and therefore, of the size of the flame. The same is true of gases of different heating value, but it should be noted that as the gases increase in heating value, the vertical line representing the disappearance of the yellow tip, moves out further and further on the air-gas ratio axis. This

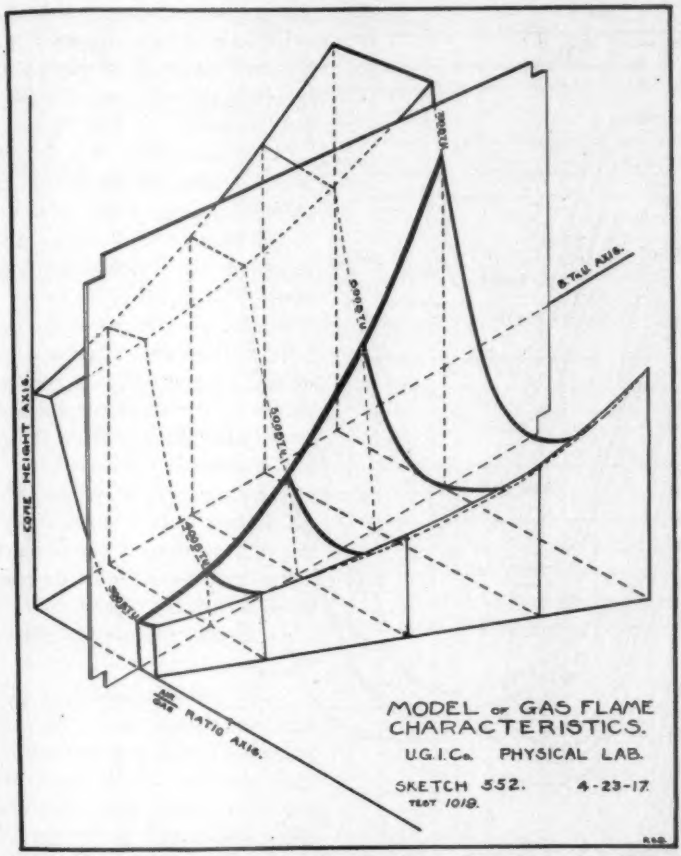


Fig. 7.—Bunsen Flame Characteristics Plotted in Three Dimensions. The Warped Surface Represents a Constant Pressure. Plane Shown Cutting Model at a Constant Air Gas Ratio.

would at once indicate that there is some relation between the air-gas ratio at this point and the heating value of the gas.

To bring this out more clearly, in Figure 8-A have been grouped four gasses all differing in heating value, but all at 2" pressure. In this group each line represents the relation between the height of the inner cone and the air-gas ratio. Observing the upper ends of these curves which correspond, as before, with the appearance of the yellow tip, it will be noted that the relation between its appearance (or disappearance) and the heating value of the gas appears to be a straight line, as shown by the dotted line passing through their ends.

All of the foregoing work was done for a purpose quite aside from determining the relation between the heating value and the disappearance of the yellow tip. The work was therefore repeated, paying particular attention to the disappearance of the yellow tip, neglecting the height and other characteristics of the flame, and covering a greater range of heating values, that is, from 305 to approximately 700 B.t.u.

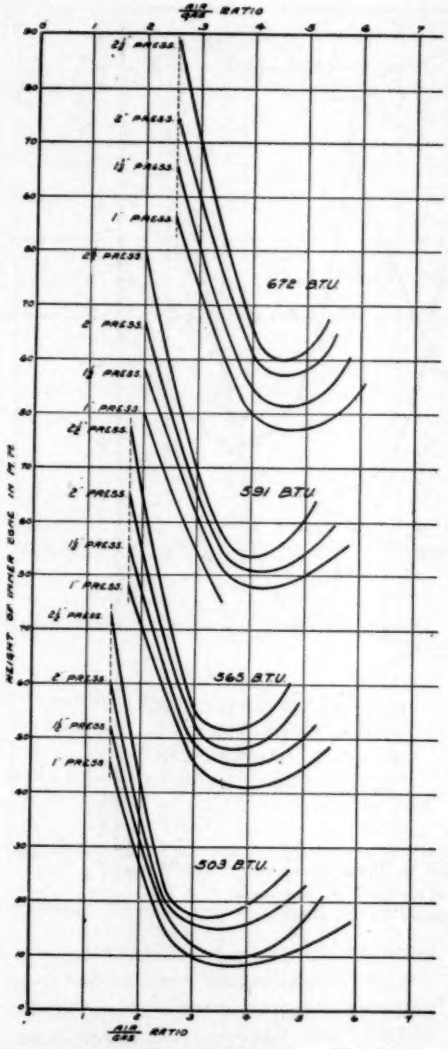


Fig. 8.—Bunsen Flame Characteristics. The Curves of of Four Gases Placed in Juxtaposition to Show the Progressive Increase of Air-Gas Ratio (at Yellow Tip) With Heating Value.

The relation was found to be as shown in Figure 8-B. It is represented quite accurately by the formula—

$$\text{B.t.u.} = K_1R + K_2.$$

It may not be true that the value of these constants will be the same for carburetted water gas made under entirely different conditions of manufacture. For all carburetted water gases experimented with, however, the relation holds and the equation becomes—

B.t.u. $= (158 \times R) + 276.5$, where R is the value of the air-gas ratio at the point of disappearance of the yellow tip. It will be noted that the intercept, represented by the constant 276.5 is approximately the heating value of the non-luminous constituents of the gas. Figure 9 shows this relation plotted for both carburetted water gas and coal gas. The values of the constants for coal gas are somewhat different from those of water gas, the relation being—

B.t.u. $= 125\ R + 351$. As the range of heating values obtainable with coal gas is very narrow compared to that of water gas, the slope of its graph cannot be so accurately determined. The range of both gases is shown by the full part of the lines.

Some little thought was given to the exact criterion of disappearance. As the amount of yellow at the tip of the inner cone becomes less and less, the blue of the lower cone gradually goes up the sides and unites at the top, forming a little arch of blue. This may, and usually does, occur slightly before the disappearance of all of the yellow. It was the appearance at the moment when the blue unites at the top of the flame which was chosen as the criterion.

A Description of the Instrument

The instrument for making practical use of this relation is quite simple and compact. Suggestions of value from both C. O. Bond and J. M. Rusby were gratefully received at this stage of its development. Figure 10 shows a diagrammatic cross section. Briefly, it consists of a 3" diameter glass tube having a connection at the bottom for water. It is shown

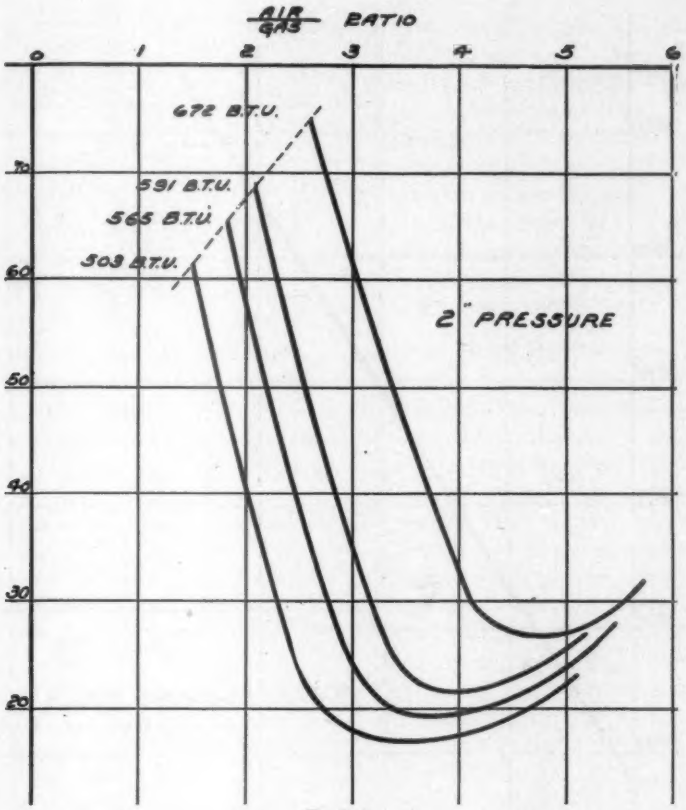


Fig 8 A.

on the extreme right. From the connection, a rubber tube runs to an aspirator vessel that may be raised or lowered in the usual manner. The interior of the glass tube is divided into two spaces by a light metal tube fastened at the top, and of varying diameter, it being larger at the bottom than it is at the top. The annular space is for air and the centre circular space is for the gas. Both are drawn in at the top, the cock being set so that they do not communicate. After filling, the opening to the air is closed and the cock turned so that the air and gas communicate through comparatively large passages, and they are both expelled as a mixture through a small mixing chamber and thence to the burner. The issuing mixture is ignited and the flame watched very carefully. The flame burns with a continually increasing ratio of air to gas, due to the changing diameter of the inner tube as the water ascends. As the yellow tip becomes smaller and finally disappears, according to the criterion described above, the water flow is quickly stopped by the cock at the bottom. The water level in the instrument is then read off the scale and its elevation is a measure of the heating value, approximately 1/16" equalling 1 B.t.u. The scale may be in arbitrary divisions or it may be graduated in B.t.u.'s.

The sketches on the left in this figure

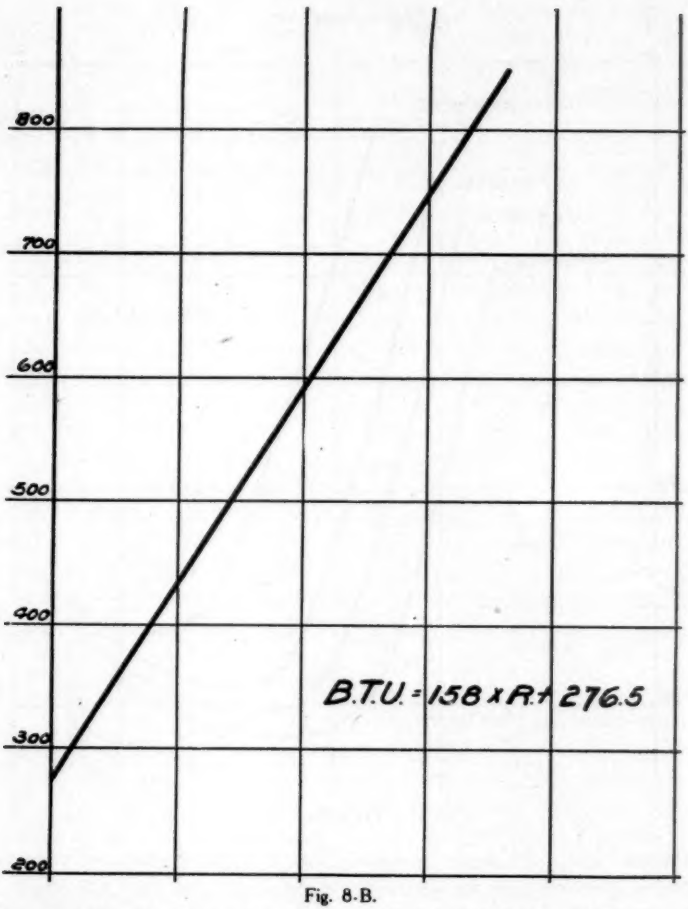


Fig. 8-B.

show different stages in the development of the instrument. One and two both have double glass tubes with a straight sided metal displacing cone in the centre of the gas space. Tapering glass cones of sufficient accuracy are not feasible.

Owing to the fact that the area of a cone increases more rapidly than does the diameter, this form necessitates a scale having unequal graduations. The calibration curve shown in Figure 11 was determined on this type of instrument; hence its departure from a straight line. No. 3 shows the same instrument as No. 2 with a central displacing cone so shaped that its calibration curve would be a straight line.

Work on this type of instrument proved that there was never any appreciable difference between the water levels in the gas and air space as the water arose. One of the glass tubes could, therefore, be dispensed with and the form on the right already described, adopted.

The scale will be attached to the instrument, on the side and it may be adjusted to take care of any differences that may arise, caused by the glass tubes varying in diameter or differences in manu-

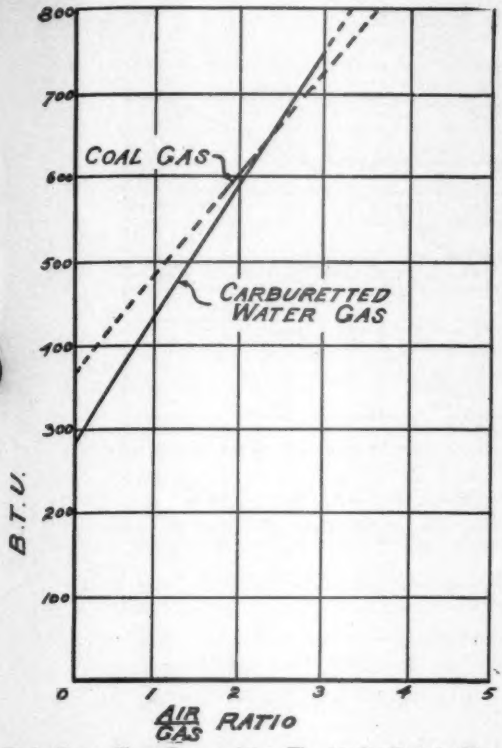


Fig. 9.—Bunsen Flame Characteristics. The Air Gas Ratio (at Disappearance of Yellow Tip) Plotted as a Function of Heating Value. For Coal and Carburetted Water Gas.

facturing conditions.

A standard procedure as to the rate of flow of water, height of aspirator above the instrument and the manipulation in general is desirable and will be decided upon. Both the air and gas are in contact with the same water. They should, therefore, have the same temperature and degree of saturation. No humidity correction need be applied. The yellow tip is in the centre of the flame and the humidity condition of the secondary air appears to have not the slightest effect upon the readings.

Some Actual Determinations

The precision of the instrument is limited to the photometric precision connected with the observance of the flame. With some experience and on a stored sample of gas, one can stop the water within ⅛ of an inch of the same point each time. This would be approximately equal to 2 B.t.u.'s on a B.t.u. scale. Such accuracy, however, is not to be expected in practice, and the accuracy mentioned at the beginning, *viz.*, between 1 and 2% is thought to represent more nearly the accuracy obtainable in practice.

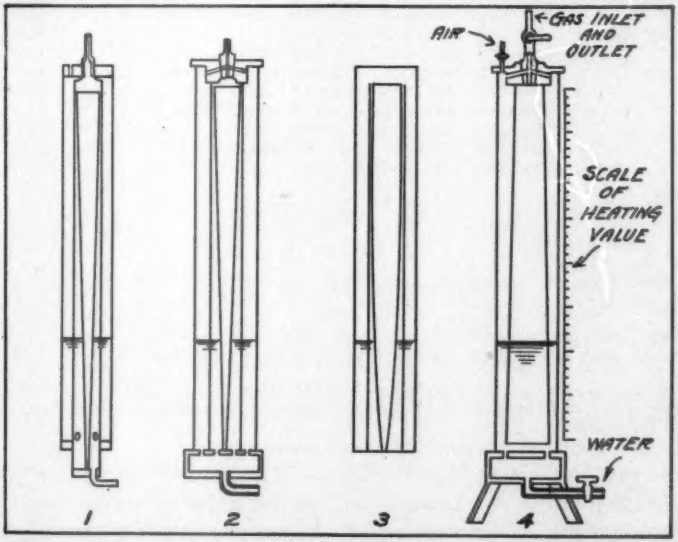


Fig. 10.—Diagrammatic Sketch of the New Heating Value Indicator. Experimental Forms on the Left.

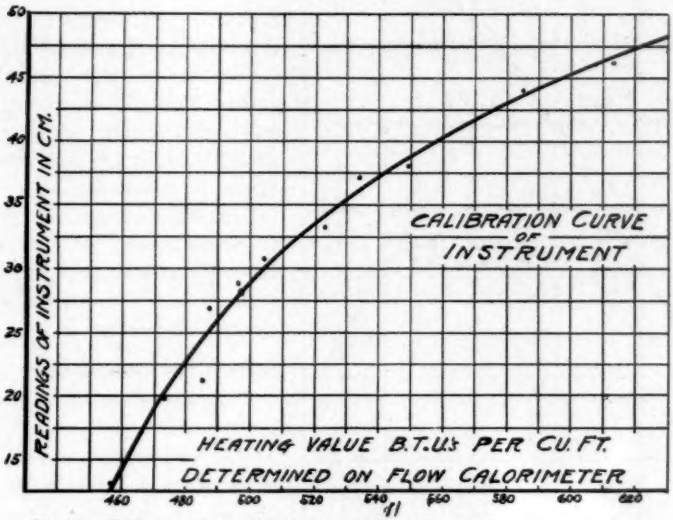


Fig. 11.—Calibration Curve of the Heating Value Indicator Plotted From the Data Given in the Table.

TABLE SHOWING THE INDIVIDUAL READINGS ON EACH WATER GAS AND THE GREATEST DEVIATION FROM THE MEAN

1. Gas No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2. Heating Value of gases. Junker's Cal. (Gross)	442	457	485	496	487	504	523	534	549	564	585	613	473	496
3. Individual Reading on each gas (Height of water in CM)	43.8	37.0	28.7	22.0	21.5	19.0	17.2	12.7	10.6	9.9	4.8	2.5	31.5	21.5
	44.7	37.6	28.6	21.0	23.5	18.9	16.8	12.6	10.8	9.5	5.5	4.0	30.0	21.6
	43.1	37.5	28.0	21.2	23.5	19.6	16.2	12.8	11.6	8.9	5.7	2.9	29.6	22.8
	43.0	36.8	28.4	21.4	23.3	19.0	17.6	13.1	12.7	8.2	5.5	3.7	30.9	21.6
	44.5	37.0	29.2	20.6	23.0	19.0	17.0	12.2	11.9	8.4	5.0	2.5	30.0	21.2
	44.2	36.6	29.0	21.5	22.6	19.8	16.5	12.8	11.2	9.0	5.8	2.9	30.0	21.7
	43.5	36.4	27.6	20.8	23.3	19.2	16.4	12.6	12.3	7.8	5.1	4.0	29.4	21.5
	44.4	37.5	30.0	19.5	23.5	18.9	16.2	13.0	10.8	8.5	5.0	4.0	30.0	23.0
	44.1	36.0	27.6	20.5	22.0	18.8	16.0	12.7	10.8	8.9	6.5	3.5	30.0	22.3
	43.3	36.4	29.5	21.6	22.3	19.5	17.0	12.7	11.6	9.1	4.8	4.7	30.5	22.4
4. Average Reading CM	43.87	36.84	28.66	21.08	22.85	19.17	16.72	12.72	11.43	8.81	5.37	3.51	30.19	21.96
5. Greatest Deviation from the mean —CM	.83	.838	1.44	1.51	.85	.63	.88	.38	1.27	1.09	1.13	1.19	1.31	1.04
6. What above deviation would mean in B. t. u.	1.33	1.76	3.88	5.21	3.14	2.71	4.39	2.24	8.00	7.85	9.94	12.85	3.64	3.95

Results of a number of heating value determinations made with the new Heating Value Indicator.

The table herewith is a compilation of the actual readings made on a number of stored samples of gas. They were made on one of the first instruments by an assistant, and the average departure from the true value of the gas is less than 1%. Figure 11 is a calibration curve made by plotting the data given in the above table.

AMERICAN GAS ASSOCIATION, Inc.

List No. 35—July, 1920

Rate Increases Secured.

Where information is not secured from company receiving increase, the source of information is noted in brackets. See Cumulative List of December, 1919, for explanation of abbreviations. This list includes only increases reported as secured subsequent to April, 1920.

CONNECTICUT

Waterbury:. Gas Lt. Co. reports second increase effective Dec. 10, 1918. New rate: 1st MCF $1.30 per M—next 40 MCF $1.20—all over 50 MCF $1.10 per M. M. M. Chge. 50¢ per month.

COLORADO

Bermidji: Gas Co. reports increase effective April 27, 1920. Old rate: per MCF $1.60 gross, $1.50 net per M. New rate: per MCF $1.90 gross, $1.80 net per M.

DISTRICT OF COLUMBIA

Washington: Company reports third increase to apply to Washington and Georgetown Gas Light Companies, effective June 1 to Aug. 31, 1920. New rate: 1st 100 MCF $1.25 per M—next 200 MCF $1.20—next 200 MCF $1.15—next 250 MCF $1.10—next 250 MCF $1.05—over 1,000 MCF $1.00 per M. Penalty after 10 days 10¢ per M. Also applies to distributing plants Rockville and Takoma Park, Md., and Rosslyn, Va.

ILLINOIS

Aurora: Western United Gas & Elec. Co. reports an increase effective Feb. 20, 1920. Ordinary rate: $1.25 per MCF, disc. 5¢ per M, during disc. period. M. M. Chge. 65¢ for 500 c. f. or less. Maximum Demand Rate, up to 50 hours in any one month $1.30 per M, 50 to 100 hours $1.25, 100 to 150, $1.20, 150 to 200, $1.15, 200 to 250, $1.10, over 250 hours in any one month $1.05 per M, disc. 5¢ per M. Minimum Bill $35.00 per month. Optional Max. Demand Rate: a Monthly Demand Rate of $2.50 per 100 c. f. of hourly Max. Demand plus Consumption Charge of $1.00 per M, disc. 5¢ per M. Minimum Bill $125.00 per month. Wholesale Rate: over 12,000 MCF per year 85¢ net per M. Old rate: effective Jan. 1, 1914, 30¢ per MCF less each block or rate.

Supplies Aurora, Addison, Algonquin, Ardmore, Bartlett, Batavia, Bensenville, Bloomingdale, Bristol, Brookfield, Carpentersville, Cary, Clarendon Hills, Congress Park, Crystal Lake, Downers Grove, Dundee East, Dundee West, East Grove, Elgin, Elgin South, Elmhurst, Fox River Grove, Fullersburg, Geneva, Glen Ellyn, Hampshire, Harvard, Hinsdale, Hollywood, Huntley, Itasca, Joliet, LaGrange, LaGrange Park, Lemont, Lisle, Lockport, Lombard, McHenry, Marengo, Montgomery, Napersville, North Aurora, Oswego, Plainfield, Plano, Ridgeville, Rockdale, Roselle, St. Charles, Sandwich, Union, Villa Park, Warrenville, Wayne, West Chicago, Western Springs, Westmore, Wheaton, Winfield, Woodstock, Yorkville.

Chicago: P. S. C. granted second increase effective June 16, 1920. New rate: 1st 400 c. f. 60¢—next 49,600 c. f. $1.15 net per M—over 50 MCF $1.00 net per M.

INDIANA

Anderson: Company reports second increase effective April 20, 1920. New rate: 1st 5 MCF $1.35 gross, $1.25 net—next 5 MCF $1.10 gross, $1.00 net—all over 10 MCF 75¢ net per M. M. M. Chge. $1.00.

Alexandria: Company reports second increase effective April 20, 1920. New rate: 1st 5 MCF $1.35 gross, $1.25 net—next 5 MCF $1.10 gross, $1.00 net—all over 10 MCF 75¢ net per M. M. M. Chge. $1.00.

Elwood: Company reports second increase effective April 20, 1920. New rate: 1st 5 MCF $1.35 gross, $1.25 net—next 5 MCF $1.10 gross, $1.00 net—all over 10 MCF 75¢ net per M. M. M. Chge. $1.00.

Frankfort: Company reports second increase effective April 1, 1920. New rate: $1.50 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

Goshen: Surcharge continued from May 1, 1920, pending application for increased rate.

Lebanon: Company reports second increase effective April 1, 1920. New rate: $1.50 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

Logansport: Company reports second increase effective April 1, 1920. New rate: $1.65 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

Marion: Company reports second increase effective April 20, 1920. New rate: 1st 5 MCF $1.35 gross, $1.25 net—next 5 MCF $1.10 gross, $1.00 net—all over 10 MCF 75¢ net per M. M. M. Chge. $1.00.

Michigan City: Company reports second increase effective April 1, 1920. New rate: 1st 30 MCF $1.50—next 20 MCF $1.40—next 25 MCF $1.30—next 425 MCF $1.10—all over 500 MCF $1.00 per M, disc. 10¢ each block 15 days. M. M. Chge. 85¢, same disc.

Peru: Company reports second increase effective April 1, 1920. New rate: $1.60 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

Plymouth: Northern Indiana G. & E. Co. reports increase effective April 1, 1920. B. D. gives old rate: $1.35 gross, $1.25 net per MCF. New rate: $1.85 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

Wabash: Company reports second increase effective April 1, 1920. New rate: $1.65 per MCF. M. M. Chge. 85¢, disc. 10¢ each 10 days.

KANSAS

Abilene: Home Gas Co. reports increase effective May 1, 1920. B. D. gives old rate: 1st MCF $1.75 decreasing 10¢ per M to $1.35 for 5th MCF—next 5 MCF $1.25—next 5 MCF $1.15—next 5 MCF $1.05—over 20 MCF $1.00 per M. New rate: 1st 3 MCF $2.15—next 4 MCF $2.05—next 8 MCF $1.95—over 15 MCF $1.85 per M. M. M. Chge. 50¢ per meter. P. P. Meter $1.75 per M.

Concordia: Gas Co. reports increase effective April 1, 1920. B. D. gives old rate: $1.50 gross, $1.40 net per MCF. New rate: 1st 2000 c. f. $1.80 gross, $1.70 net—next 5100 c. f. $1.62 gross, $1.52 net per M—over 8 MCF $1.52 gross, $1.42 net. S. Chge. 70¢ per month per meter.

MASSACHUSETTS

Brockton: Plymouth Gas Lt. Co. reports sixth increase effective June 15, 1920. New rate: 100 c. f. 95¢, 200 c. f. $1.20, 300 c. f. $1.45, 400 c. f. $1.70, 500 c. f. $1.90, 600 c. f. $2.10, 700 c. f. $2.30, 800 c. f. $2.50, 900 c. f. $2.70, 1,000 c. f. $2.85, 10¢ disc. each block 10 days, each additional 100 c. f. add 20¢ per M, net. M. M. Chge. 50¢ per month. P. P. Meters, above rates, no disc. For former rates see Cum. List No. 5 and Current List No. 34.

East Hampton: Gas Co. reports third increase effective May 15, 1920. New rate: $2.50 net per MCF.

Worcester: Company reports fourth increase effective May 15, 1920. New rate: 1st 25 MCF $1.60 per M—next 25 MCF $1.55—next 50 MCF $1.50—over 100 MCF $1.45, disc. 10¢ per M each block.

NEW YORK

Brooklyn: Brooklyn Union Gas Co. reports increase effective Mar. 2, 1920. Old rate: 80¢ per MCF. New rate: by order of U. S. District Court 97¢ per MCF.

Haverstraw: West Shore Gas Co. reports second increase effective April 25, 1920. Old rate: $1.75 per MCF, disc. 5%. New rate: $2.50 per MCF, disc. 5% prompt pay.

Norwich: Company reports second increase effective Aug. 15, 1918. New rate: $1.95 per MCF. Industrial rate: 1st 10 MCF $1.95—next 10 MCF $1.65—next 10 MCF $1.45—next 20 MCF $1.20—next 50 MCF $1.10—next 100 MCF $1.65—over 200 MCF $1.00 per M, disc. 10¢ per M each block, prompt pay.

Ogdensburg: Gas Co. reports second increase effective May 12, 1920. New rate: 1st 5 MCF $2.35—next 5 MCF $2.10—next 5 MCF $1.85—over 15 MCF $1.60 per M, disc. 10¢ per M, 10 days.

PENNSYLVANIA

Kingston: Second increase effective Aug. 10, 1918, from $1.30 to block scale $2.00 to $1.50 per MCF. Third increase effective June 12, 1920. New rate: 1st 10 MCF $2.15 net per M—next 10 MCF $2.05—next 10 MCF $1.95—next 10 MCF $1.85—next 60 MCF $1.75—next 100 MCF $1.70—over 200 MCF $1.65. R. T. S. Chge. yearly basis, monthly payments—3 Lt. Meter 70¢ per month, 5 Lt. 75¢, 10 Lt. 85¢, 20 Lt. 90¢, 30 Lt. $1.00, 45 Lt. $1.25, 60 Lt. $1.50, 80 Lt. $2.10, 100 Lt. $2.50, 150 Lt. $3.33.

Norristown: Counties G. & E. Co., Old rate: 1st 10 MCF $1.10—next 20 MCF $1.00—next 20 MCF 90¢—over 50 MCF 80¢ per M. Cash disc. 10¢ per M. M. M. Chge. 30¢ per month. New rate, effective Sept. 15, 1919: 1st 10 MCF $1.20—next 20 MCF $1.10—next 20 MCF $1.00—over 50 MCF 90¢ per M. Cash disc. 10¢ per M. M. M. Chge. 30¢ per month.

OHIO

Defiance: Gas & Electric Co. reports increase effective June 1, 1920. Old rate: per MCF $1.35 gross, $1.25 net. New rate: $2.10 per MCF, disc. 10¢ per M 10 days. M. M. Chge. 75¢ per month.

(*Continued on page 465*)

QUESTION BOX

THE questions and answers on accounting subjects in the Question Box have been contributed by the Accounting Section Committee on State Representatives, Mr. J. W. Heins, Chairman, who will be glad to receive inquiries from any of our members on their accounting problems.

Questions and answers under "General Problems" are the result of inquiries received at Association headquarters and answered through the committees of the various Sections or from the Association files.

Answers from our members are solicited on questions which come within their experience and such answers should refer to code number of Question, A-1, G-1, etc.

—*Editor.*

ACCOUNTING PROBLEMS

A-7 Has any system of income accounting for a gas company been worked out by the Association which for the purpose of making gas rates, segregates the income from merchandising from that of gas sales? Can you put us in touch with any gas companies following such a practice?

ANSWERS.

Mr. W. J. Meyers, Chairman, Standard Classification of Accounts Committee

If merchandising of gas appliances is carried on solely for the purpose of stimulating the demand for gas it is thereby made a part of the gas business and comparatively simple accounting is sufficient. Any loss resulting from such merchandising is properly chargeable as an expense of gas operations, and the investment of the company in the appliances carried for sale is a part of the investment devoted to the business of supplying gas.

On the other hand if the merchandising of appliances is not essential to the satisfactory development of demand for gas and the company's franchise for the distribution and sale of gas does not require it to sell such appliances to gas consumers, the company may properly treat such merchandising as a separate and distinct department, and if it desires to treat it thus it sets up a separate record for such department with a separate investment account and separate accounts for revenues, expenses (including rents, interest, taxes, etc., as well as labor and supervision and other direct expenses) incident to the operation of the merchandising department leading finally to a separate profit and loss account for such department.

The views of the Committee on Standard Classification of Accounts regarding proper accounting in this connection are indicated in the recently added Note C attached to account No. 443, "Merchandising and Jobbing," page 34 of the Tentative Standard Classification of Accounts for Gas Corporations. This note reads as follows:

"If the corporation is engaged in merchandising or jobbing primarily for direct profit rather than for stimulating the consumption of gas, such merchandising and jobbing may be organized and accounted for as a distinct department of the corporation co-ordinate with the gas department."

Mr. F. H. Patterson, Rochester Gas & Electric Corpn., Rochester, N. Y.

The Merchandising Accounting of this Company is an integral part of the whole accounting system of the Company in conformity with the requirements of the Public Service Commission classification of accounts. Therefore we find it impracticable to segregate the revenues and expenses of this Department with any degree of accuracy. However, we do prepare memorandum reports, agreeing with the accounts, showing to some extent the results of these operations monthly. These while serving as a means of managerial control of the Department are imperfect in that interest, rentals, depreciation and other overhead and fixed charges are not included.

Mr. Wm. Schmidt, Jr., Consolidated Gas, Electric Light & Power Co., Baltimore, Md.

We use the classification of accounts for merchandise operations as adopted by the National Electric Light Association. Under this classification the merchandise operations are charged with all expenses applicable thereto, which include rent for space occupied.

The interest on investment in the merchandise business, which covers interest on working capital (stock and accounts receivable) and interest on furniture and fixtures used in the Merchandise Department, is charged against merchandise net earnings and credited to the company's fixed charges applicable to the gas and electric business.

Mr. F. M. James, Western United Gas & Electric Co., Aurora, Ill.

The State Public Utilities Commission of Illinois adopted a uniform classification of accounts for all gas utilities which provides, briefly, that the revenue derived from the sale of merchandise be credited to an account "508—Gas Merchandise and Jobbing Revenue"; that the cost of the merchandise sold, including incidental expenses in connection therewith, and the cost of material and labor used in installing merchandise be charged agaist this revenue account, the balance of the account to be carried to the corporate income account under the heading "Revenue from Miscellaneous Gas Operations."

They provide in the gas operating expenses a group of accounts, "New Business," to which is to be charged all promotional expenses.

It is very difficult in any system of accounting where there is not an actual physical separation of the business, where some facilities and some employees are used jointly, where the capital involved is mingled, to separate and set up accounts that will exactly reflect results from two classes of operations. In our discussion with the commissions prior to the adoption by them of this uniform classification, this feature was gone into at some length. They believe, and are disposed to allow as an operating expense in a rate case, something for the promotion of new business. We operating men know that, to a considerable measure at least, the promotion of new business is through the sale of appliances. However, any system of accounts, I believe, should be so arranged to as nearly as possible set out all the expenses and all the income in any phase of the business so that the management can be guided in the expenditure of effort by the results attained.

Mr. W. A. Sauer, Chairman, Merchandise Accounting Committee

The only opinion I can give is the one offered by this Company's attorneys which is that a public utility is entitled under the law to earn a return based upon the operating expenses of its utility business without deduction for net income received from non-utility business. They consider the sale of merchandise not a part of a utility business.

Supplementing the above, relative to a segregation of the income from merchandise from the gas income, if you will refer to a copy of the system of accounts as authorized by the State Utility Commission of Illinois you will find under the heading "Operating Revenues" an account No. 508 entitled "Gas Merchandise and Jobbing Revenue." This account segregates the income and the expense of selling merchandise. It comes under the caption "Revenue from Miscellanous Gas Oprations," but our attorneys do not consider it a gas operating revenue.

It is a simple matter to lay out separate accounts for merchandise sales arranged so as to show results that can be listed on the revenue and financial statements as an income from other than gas operations.

GENERAL PROBLEMS

G-16 Which would be the best installation to put in streets, to be paved with concrete, 4-inch gas pipes with leaded joints, or welded 4-inch steel pipes, this to be considered from the point of first cost and length of life.

ANSWERS.

Mr. G. T. Macbeth, Westchester Lighting Co., Mt. Vernon, N. Y.

For gas mains with distribution pressure. With maximum pressure of 7" water column.

Use 4" cast iron bell and spigot pipe with cement joints with one lead wool joint about every 100 feet.

For gas mains with 5 pounds pressure.

Use 4" cast iron bell and spigot pipe with lead wool joints and Miller Grip packing for yarn. *Note*: It is necessary to have Miller Grip packing very dry and, therefore, it is advisable to hang it in a warm place for a week or ten days after it is received from the supply agents, Strong Machinery & Supply Co., New York City.

For gas mains with pressure of 20 to 30 pounds.

Use full weight black lap welded 4" wrought iron pipe. Steel pipe can also be used. It is almost as good as black lap welded.

On short jobs, we find it just as satisfactory and just as cheap to use screw ends with long recess couplings for joints as welded joints.

Unless welding is done by somebody who is an expert in welding joints, the joints are apt to be porous and leak when tested under 100 pounds of air, and they may also pull apart if welded on the bank and put into the trench afterwards.

Mr. F. C. Weber, H. L. Doherty & Co., 60 Wall St., New York, N. Y.

The procedure varies with the location, soil conditions, etc. Cast iron pipe is of greater durability than steel pipe, although the latter depends particularly on the quality purchased. If one secured wrought iron pipe instead of steel, its life under normal soil conditions is almost as long as cast iron.

Lead joints properly made are, in my opinion, quite as satisfactory as welded joints, and frequently are more so because they permit of a certain freedom for expansion and contraction. It is difficult to make welded joints so that breakages will not occur in the pipe generally at the edge of the joint. If the main is to be laid under a permanent pavement it is probably better to anticipate a very slight leakage through lead joints out of cast iron pipe than to create the possibility of a considerable break in steel pipe welded, which might cause a very costly leak. It is also probable that in most localities cast iron pipe laid with lead joints will be somewhat less expensive than steel pipe with welded joints.

It would not be a great mistake to lay either kind of a pipe, but probably greater length of life and smaller leakage will be secured from well welded cast iron pipe with lead joints, than from steel pipe with welded joints.

The first cost varies materially with locality. It is a simple matter for the person asking the question to figure the relative costs.

Mr. Walton Forstall, Cast Iron Pipe Standards Committee

I would recommend 4" cast iron pipe with cement joints. Pipe so laid will be practically bottle tight, which would not be the case with leaded joints, and the cast iron will have an indefinite life, whereas the life of steel pipe, while, say, 30 to 50 years in good soil and not affected by electrolysis, might be very much shorter in bad soil and where there is some electrolysis.

Mr. E. H. Earnshaw, Public Service Gas Co., Newark, N. J.

1. Under no circumstances would I recommend the 4" cast iron pipe with lead joints, as our experience and the information collected by the Committee on Cast Iron Pipe Joints indicates that such joints will leak. Four inch cast iron pipe laid with cement joints in accordance with the instructions formulated by the Committee on Cast Iron Pipe Joints, will not leak. Of course welded 4" steel pipe will not leak either, so in this respect there is no essential difference.

2. The first cost depends on the relative prices of cast iron and wrought iron pipe respectively, and the cost of laying. The prices under present conditions fluctuate to such an extent that the relative first cost becomes a matter for local consideration.

3. The length of life for 4" cast iron pipe is practically indefinite. The life of 4" steel pipe in a dry, sandy soil, free from electrolytic influences should be from twenty to thirty years, or even longer. If there is any question of electrolysis the welded steel pipe forms a continuous conductor and the liability of electrolytic damage is much greater than with 4" cast iron pipe, in which the cement joints act as insulating joints and interrupt the flow of the current.

4. There is no objection to laying 4" welded steel pipe under pavement, provided there is no danger of electrolysis and the soil is favorable for the preservation of the pipe.

Summarizing the above, I would only recommend the laying of steel pipe if the first cost is less than cast iron and the soil and electrolytic conditions are very favorable.

Mr. H. E. Bates, Peoples Gas Light & Coke Co., Chicago, Ill.

The 4" steel pipe with welded joints would probably be the cheaper from the standpoint of first cost, but the cast iron pipe should have the longer life. However, with welded pipe, where the joints are properly welded, the leakage would be less than with cast iron pipe with lead joints.

Considering from the standpoint of leakage, it would be more advisable to install welded pipe in pavement than cast iron pipe. The conditions regarding electrolysis should be carefully considered in determining the installation of a welded pipe line. If there is danger of electrolysis due to stray currents to any extent and adequate protection is not provided for taking care of such electrolysis, I do not believe a welded pipe line would be advisable, especially in a city of any size. It would be better, in such event, to lay steel pipe with Dresser coupling joints than with welded joints.

G-18 What has been the experience of American companies in the removal of organic sulphur compounds? It has been stated that the inclined bench is more prone to produce high sulphur content in the gas than other types. Has this actually been proven in practical results?

ANSWERS.

Mr. C. H. Stone, Purification Committee

The problem has been attacked in a great variety of ways. Among the methods tested have been: Lime purification, the use of alkaline sulphides, admission of oxygen or air, the decomposition of the carbon bisulphide at moderately high temperatures, the action of steam at high temperatures and pressures, the action of metals or metallic oxides at high temperatures, the washing out of the carbon bisulphide by liquor, by oils and by aniline.

The only method with which I am familiar, successfully employed in this country, is the one originating, I believe, with the Portland Gas and Coke Company of Oregon, in which the gas, after removal of H_2S, is passed through a superheater, at a temperature of 1,200° to 1,300° F. Here, about 90% of the remaining organic sulphur is converted into H_2S, which is then removed by oxide purifiers. This process is described in the *Progressive Age* of May 15, 1909, and in the *Proceedings* of the A. G. I. for 1910.

There is another process in use in London, where ten million feet of gas every day are treated satisfactorily. In this, the gas is first heated to 410° C. by producer gas, and it then passes to tubes containing a catalysing agent, the latter being maintained at about 430° C. The catalyzed gas passes to a temperature changer where it gives up part of its heat and then passes to the coolers and regular purifiers. They claim the result of a long period of working shows that the average sulphur content of the gas is reduced from 43 to 8 grains per hundred cubic feet, although these figures will vary.

I might say in conclusion that the subject has already been suggested to the Purification Committee of the A. G. A., and if it is continued in service by that Association, it will probably take up the question of the amount and character of organic sulphur in the present day gases, and study out methods for its removal.

As to the amount of sulphur compound made from the same kind of coal in different types of installations, I have no definite knowledge on this subject, although I

believe it is generally admitted that certain types of apparatus will give considerable more sulphur with the same coals, possibly due to the difference in temperature, time of contact, etc.

Mr. H. O. Andrew, Purification Committee

Mr. L. J. Willien published an article in the *Gas Age*, January 1, 1913, which gives some very complete data on sulphur in illuminating gas. The article would no doubt be of interest to any company working on this problem.

Hydrogen sulphide is less stable than carbon disulphide. Using H_2S gas it was found that 95.3% was oxidized at 425° C. ($SO_2 + H_2O$). The presence of moisture (steaming of retorts) accelerates the liberation of H_2S from the coal and also accelerates its rate of oxidation. The reaction $CS_2 + 4H = 2H_2S + C$ is reversible and the higher the temperature the greater the tendency to go to the left, *i. e.*, to the formation of CS_2. It is the writer's opinion, therefore, and I believe practice bears this out, that the type of retort which forces the gas to long contact times with hot retort walls and incandescent coke will produce more CS_2 with a given grade of coal, than in retorts where the gas is protected from this condition either by the design of the retort or by steaming the retort (which decreases the contact time).

Generally speaking the vertical retort would give the least CS_2, the horizontal the next and the inclined the most. Steaming of any type of retort would tend to decrease the CS_2 content of the gas.

Mr. C. Earl Littell, Purification Committee

Your correspondent may be able to obtain some very authentic data in regard to the removal of organic sulphur compounds if he will write to The United Gas Improvement Co., Broad and Arch Sts., Philadelphia, Pa. They have done quite a bit of work along this line at their Harrisburg plant, and I think at present have a purifier in operation for removing carbon bisulphide. Or he might write direct to Mr. Williams, Manager of the Harrisburg Gas Co.

Mr. Alfred R. Powell, Bureau of Mines, Pittsburgh, Pa.

Very little work has been done on the organic sulphur compounds in gas. A study is now being made of this problem by a co-operative agreement between Johns Hopkins University, the United Gas Improvement Company and the U. S. Bureau of Mines at the experimental gas plant of Johns Hopkins University.

Fixed sulphur (sulphur compounds other than hydrogen sulphide) is found in coal gas from horizontal retort benches in quantities ranging from 10 grains to 50 grains per 100 cu. ft. or higher, depending on the sulphur content of the coal. The larger part of this fixed sulphur is carbon bisulphide with smaller amounts of other organic sulphur compounds, such as thiophen, mercaptans, thioethers, carbon oxysulphide, etc. Probably 90 per cent. of the fixed sulphur is carbon bisulphide, so the removal of this impurity is necessary in some cases.

Various processes for the removal of organic sulphur have been tried, utilizing organic solvents such as aniline, anthracene oil and other distillates, but none of these have given good commercial results. The use of a hot checkerbrick chamber to crack up the organic sulphur compounds to form hydrogen sulphide is generally considered the best method. This has been in use on the Pacific Coast for some time. A modification of this method consists in heating the gas and then passing it through a chamber containing balls of reduced nickel, back through a heat enchanger and then to the cooler and oxide boxes. The advantage in this is that a lower temperature may be used, but after 30 hours operation deposited carbon must be burnt off the nickel catalysts to render them active. No installation of this type is known to exist in this country.

Results obtained in practice would indicate that the type of installation affects the amount of sulphur compounds in the gas.

In general, fixed sulphur will be higher in gas from horizontal benches. Data from some German gas works indicates that carbon bisulphide may be 50% lower in vertical retorts than in the ordinary horizontal retorts. No data is available as to a

comparison between inclined and horizontal benches. The hydrogen sulphide content of coal gas is largely dependent on the retort temperature, but may be affected by the distance the gas must travel until cool, and conditions in the hydraulic main.

Mr. J. Van G. Postles, Purification Committee

We have done some laboratory work along this line which would indicate that iron oxide heated up to 350° or 400° F. would change most of the organic sulphur into H_2S which would be absorbed by the iron oxide. About 10 grains of CS_2 pass this catalyser which it seems impossible to change no matter what the quantity of organic sulphur on the inlet. We are working on a practical catalyser built on the above lines, but as yet have no figures.

For details of the apparatus see A. F. Kunberger and C. J. O'Donnell's patent papers on a hot catalyser.

Whether the inclined bench is more prone to produce a high sulphur content in the gas than other types, I am not prepared to say, but high heats in the retort settings will form more organic sulphur compounds than lower heats and it might be a question of heats in the various types of benches rather than the benches themselves.

Mr. W. H. Fulweiler, United Gas Improvement Co., 319 Arch St., Philadelphia, Pa.

There are only two methods that I know of that are actually in use in America at the present time. On the West coast, they are using the Hall-Pabst process, which involves reheating the gas in a checkerbrick lined vessel, at a relatively high temperature. This decomposes the CS_2 with a formation of H_2S which is subsequently removed with iron oxide in the usual manner. The other process is one assigned to our company which involves heating the gas in the presence of an especially prepared iron oxide which acts as a catalyst and permits the decomposition of carbon bisulphide at a much lower temperature, *i. e.*, 350° to 400° F.

It is believed that the Pabst process while it has been successful on the all oil water gas of the Pacific coast and would probably be suitable for coal gas would be likely to cause some loss of unsaturated hydrocarbons if applied to the water gas.

Regarding the second inquiry about the effect of different systems of carbonization on the sulphur compounds formed, I have no accurate information regarding inclined retorts, but we know that there is considerable difference in the sulphur formed as between verticals and horizontals.

G-19 Will you kindly advise me what make of check valve you recommend be placed on gas lines to prevent air backing against the meter and into the gas mains in industrial appliances where air pressure is utilized?

ANSWER.

Mr. Wm. A. Ehlers, Association Headquarters

The only check valve that I know of to be used on gas lines to prevent air backing against the meter when used in connection with industrial appliance installations, is the Connolly Back Pressure Valve.

G-20 One of our local hospitals wishes to purchase a Gas Steam Boiler for sterilizing mattresses of the ordinary hospital size, 3 ft. wide by 6 ft. 6 in. long. It is planned to place a series of pipes under a mattress and for steam at 10 lbs. boiler pressure to go through it. This work will be done in a small concrete walled room 7 ft. by 11½ ft. by 8 ft. high.

Do you know of any such installation, and if so what size boiler is used?

ANSWER.

Mr. Wm. A. Ehlers, Association Headquarters

The plan for sterilizing mattresses as outlined above would not be practicable for the reason that the steam would have a tendency to condense rapidly, resulting in a great deal of moisture in the room with possibility of moisture collecting on the walls

and ceiling. It would be necessary to provide some means of drying the mattresses which would have a tendency to revive any germ life.

We suggest that the mattresses be hung in an indirect gas heated oven where the temperature can be maintained at the point slightly below the charring point of the material and that they be held at this temperature until the heat has had time to thoroughly penetrate every portion of the mattress. This will unquestionably kill all germs and at the same time the mattresses when removed will be ready for use.

G-21 Can you furnish us with any data on gas engine driven gas pumping equipment.

We would like to have a good handbook on the subject if it is possible to obtain one, or tables and data necessary to calculate equipment for particular conditions.

ANSWER.

Mr. Wm. A. Ehlers, Association Headquarters

The only handbook we can suggest on this subject, that contains tables and data is a section of the N. C. G. A. Salesman's Handbook which sells for two dollars. This section of the Handbook gives concrete details of the construction of gas engines and also some data on the power of gas engines.

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(Continued from page 458)

Delaware: Ohio Natural Gas Co. reports increase effective May 8, 1920. New rate: 1st 5 MCF 48¢ per M—next 5 MCF 53¢—next 5 MCF 58¢—over 15 MCF 63¢ per M, disc. 3¢ per M, 10 days. M. M. Chge., the price of 2 MCF at first rate.

Warren: Trumbull Public Service Co. reports increase effective Oct. 1, 1919. Old rate: $1.17 gross, $1.05 net per MCF. New rate: 1st 20 MCF $1.30—over 20 MCF $1.15 per M, disc. 5¢ per M 10 days. M. M. Chge. 55¢ per month. Industrial $1.10 net per MCF.

RHODE ISLAND

Providence: Company reports third increase effective May 17, 1920, schedule based on 510 B. t. u. gas: 1st 10 MCF $1.35—next 90 MCF $1.25—over 100 MCF $1.15 per M, disc. 10¢ per M, 15 days. S. Chge. $6.00 per meter per year, payable monthly. Rates reduced 5¢ per M and S. Chge. added. B. t. u. reduced from 570 to 510. Protest of City refused by P. M. C. after a hearing.

SOUTH CAROLINA

Charleston: Consolidated Ry. & Ltg. Co. reports second increase effective Nov. 12, 1920. New rate: 1st 10 MCF $1.25—next 20 MCF $1.15—next 20 MCF $1.05—over 50 MCF 95¢ per M. All rates net.

UTAH

Salt Lake City: Gas Co. reports third increase effective April 15, 1920. New rate: 1st 2 MCF $1.40 per M—next 20 MCF $1.30—over 22 MCF $1.20 per M, disc. 10¢ per M. R. T. S. Chge. remains 25¢ per month per meter.

WASHINGTON

Seattle: Company reports second increase effective April 1, 1920. New rate: 500 c. f. or less 85¢—next 1,500 c. f. $1.60 per M—next 3 MCF $1.40—next 5 MCF $1.15, disc. 10¢ per M, 10 days. Next 30 MCF $1.05 net per M—next 60 MCF 95¢—over 100 MCF 85¢ net per M. P. P. rate 700 c. f. or less $1.05, over 700 c. f. $1.50 per M.

Tacoma: Company reports second increase effective Feb. 20, 1920. New rate: net for Tacoma, Ruston and Regents Park: 0 c. f. $1.00, 1st 100 c. f. $1.10, increasing 10¢ for each additional 100 c. f. to $2.00 for tenth. Next MCF $1.40—next MCF $1.30—next MCF $1.20—next 6 MCF $1.15—next 10 MCF 90¢—next 30 MCF 85¢—next 50 MCF 70¢ per M. Same rates for Payullup and Pierce County, outside City limits up to 1st MCF when 10¢ per M is added to each following block. P. P. Meters $2.10 per MCF.

Employment Bureau

SERVICES REQUIRED

WATER GAS—Experienced water gas maker wanted. Gas Works vicinity of New York. Address—American Gas Association, 130 East Fifteenth Street, New York, N. Y.

Key No. 4

WANTED—Thoroughly experienced gas appliance salesman. State age, reference and salary expected. Address—American Gas Association.

Key No. 7

WANTED—Positions are open in large eastern natural gas company for man capable of taking charge of appliance testing laboratory, also several men capable of selling natural gas to industries, particularly men who can design and install burners and furnaces. Applications should give full details of training, experience, salary, etc., addressed to American Gas Association.

Key No. 8

SERVICES OFFERED

WANTED—Position as manager in city of 60,000 or over by college graduate of 16 years connection with gas business. A successful record as manager of 2 gas companies, and as superintendent of one of the largest gas plants in U. S. Has had practical experience in every branch of the business and has made good. Address American Gas Association.

Kep No. 102

WANTED—Position as gas engineer or manager by a man of large experience in both capacities in manufacture and distribution of coal or water gas. 38 years of age with excellent references. Address—American Gas Association, 130 East 15th Street.

Key No. 103

WANTED—Young man desires a position with opportunities. Present location 5 years and cannot go higher. Thoroughly trained and experienced in water gas operation. New business and management. Address—American Gas Association.

Key No. 104

WANTED—Young man 32, experienced manager and office manager desires position with a combination company. Salary $250.co per month. Address—American Gas Association.

Key No. 106

WANTED—Position as superintendent wanted by technical man, married, 30 years of age, experienced in manufacture of water gas and high and low pressure distribution. Can furnish best of references. Address—American Gas Association, 130 East Fifteenth St., New York, N. Y.

Key No. 108

WANTED—Position as Manager or Assistant in medium size town. Has had 15 years experience in coal and water gas and electric operation. Technical graduate. Any location. Address—American Gas Association.

Key No. 109

WANTED—Position as Industrial Power and Fuel Engineer. Technical engineer and salesman of excellent qualifications for industrial power and fuel sales. Now employed $3000. Address—A. G. A.

Key No. 111

WANTED—Position as Superintendent of a Coal and Water Gas Plant having a practical experience in the manufacture of same. Age 44 years and married. Salary 250 per month. A-1 references, can take up duties at once. Address A. G. A.

Key No. 112

AMERICAN GAS ASSOCIATION, INC.

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ASS'T SECRETARY-MANAGER	LOUIS STOTZ	Ass'n H'dquarters
ASS'T TREASURER	W. CULLEN MORRIS	New York, N. Y.
ASS'T TREASURER	HENRY M. BRUNDAGE	New York, N. Y.